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All communications to be addressed:
"The Editor, Journal of Agriculture, Victoria Square, Adelaide."

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T. BUTTERFIELD,

Minister of Agriculture.

POINTS FOR PRODUCERS.

An Improved Pasteurizer.

The first enamelled, glass-lined pasteurizer installed in South Australia, which is in operation at Messrs. Taylor Bros. butter factory at Gawler, was inspected by the Assistant Dairy Expert of the Department of Agriculture (Mr. H. J. Apps) recently. This pasteurizer has a capacity of 1,000galls., and measures over all, approximately 15ft. x 6ft. x 6ft. It is fitted with all the latest improvements, including twin delivery coils, insulation, and ball bearings. After his inspection, Mr. Apps remarked that from a cursory examination this plant seemed infinitely superior to the wood or lined machine, and its substantial nature should make a strong appeal to manufacturers of butter. Apart from its durability, the machine appeared to be easy to clean, to render the control of temperatures less difficult, and to insure immunity from metallic troubles.

Rations for Pigs.

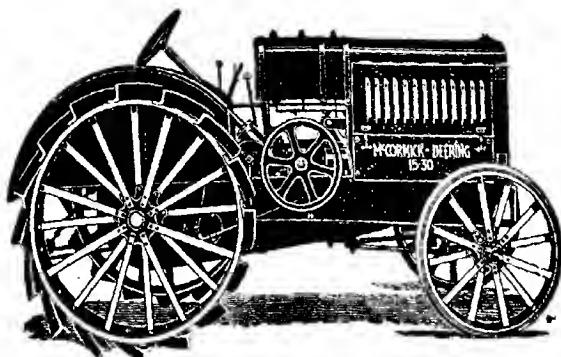
As daily rations for fattening pigs, the following have been prepared by the Director of Agriculture (Professor A. J. Perkins) for the guidance of a firm of pig raisers in the Hills District:—

	Light.	Heavy
Porkers. (80lbs.)	Baconers. (150lbs.)	Baconers. (200lbs.)
	lbs.	lbs.
1. Crushed wheat	$3\frac{1}{2}$	$5\frac{1}{2}$
2. Crushed wheat	2	4
Pollard	2	$2\frac{1}{2}$
3. Crushed barley	$1\frac{1}{2}$	2
Pollard	3	$5\frac{1}{2}$
4. Crushed barley	2	4
Crushed peas	2	$2\frac{1}{2}$
5. Crushed oats	2	$4\frac{1}{2}$
Crushed peas	$1\frac{1}{2}$	2
6. Crushed barley	3	5
Separated milk	7	$12\frac{1}{2}$

The figures are not absolute, and must be varied according to requirements of animals; they offer, however, a definite indication as to the proportions in which the various foodstuffs should be supplied to fattening animals.

Journals Wanted.

In the New York Public Library there is a set of volumes of the *Journal of Agriculture* complete except for the following numbers:— Volume 4, No. 2, September, 1900; Volume 4, No. 6, January, 1901; Volume 4, No. 8, March, 1901; Volume 5, No. 7, February, 1902; Volume 8, No. 1, August, 1904; Volume 8, No. 6, January, 1905; Volume 9, No. 1, August, 1905; Volume 9, No. 10, May, 1906; Volume 9, No. 12, July, 1906; Volume 10, No. 1, August, 1906.



McCormick-Deering Tractors.

THE McCormick-Deering Tractor is well adapted to farm work. It is equipped with a vertical 4-cylinder valve-in-head engine, which operates economically on kerosene and other low-priced fuels. The cylinders are cast separately and fitted into the engine block, so that they may be easily removed and replaced in case they become scored or worn. The Tractor is equipped with high tension magneto, with impulse starter, has a throttle governor, and the principal bearings throughout the entire machine are roller and ball. A belt pulley of large diameter on the right side of the machine is conveniently placed for belt work, and can be started or stopped from the driver's seat, independent of the engine. Three forward speeds, 2, 3, and 4 miles an hour, and reverse.

TWO SIZES: 10-20 and 15-30.

See the IHC local agent or write direct to us for Illustrated Pamphlet.

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Agents Everywhere.

Volume 10, No. 2, September, 1906; Volume 10, No. 6, January, 1907.
 Volume 10, No. 12, July, 1907; Volume 11, No. 2, September, 1907.
 Volume 12, No. 1, August, 1908; Volume 12, No. 6, January, 1909.
 Volume 12, No. 9, April, 1909; Volume 13, No. 3, October, 1909.
 Volume 13, No. 6, January, 1910; Volume 13, No. 12, July, 1910.
 Volume 15, No. 5, December, 1911; Volume 15, No. 6, January, 1912.
 Volume 15, No. 9, April, 1912; Volume 16, No. 4, November, 1912.
 Volume 19, No. 9, April, 1916; Volume 20, No. 2, September 1916.

The director of that library wishes to make the set complete. Unfortunately, the Department of Agriculture is not able to supply the missing numbers, but readers who have kept their *Journals* may have one or more of these numbers for which they have little use. Any such copies forwarded to the Editor, *Journal of Agriculture*, Adelaide, would be thankfully received.

PROTEIN CONTENT OF BARLEYS.

A request from the Tarlee Branch of the Agricultural Bureau for information as to the protein contents of Cape and Malting barley lead to analyses being made at the Roseworthy Agricultural College of barley grown at that institution. The State Agricultural Chemist (Mr. A. T. Jefferis, B.Sc.) gives the following results:—

	Protein. Per cent.
<i>Malting</i> —	
Prior	12.3
Duckbill	13.2
<i>Cape</i> —	
Roseworthy Oregon	12.8
Shorthead	12.8

There appears to be more proteins in South Australian than in European, but much the same as in Queensland, as the following figures show:—

England, 2 rowed, av. of 6 varieties	9.7
Denmark, 6 rowed, av. early and late sown . .	11.6
England, 6 rowed, av. 4 varieties	9.0
Queensland barley	12.4

INQUIRY DEPARTMENT.

Any questions relating to methods of agriculture, horticulture, viticulture, dairying, &c., diseases of stock and poultry, insect and fungoid pests, the export of produce, and similar subjects, will be referred to the Government experts, and replies will be published in these pages for the benefit of producers generally. The name and address of the inquirer must accompany each question. Inquiries received from the question-boxes established by Branches of the Agricultural Bureau will be similarly dealt with. All correspondence should be addressed to "The Editor, *The Journal of Agriculture*, Adelaide."

[Replies supplied by MR. ALAN H. ROBIN, B.V.Sc., Veterinary Officer, Stock and Brands Department.]

Agricultural Bureau, Meadows, asks the reason why several pigs of a litter have been born without a manure passage.

Reply—Absence of the anus, as sometimes happens in young pigs, is a congenital defect. Sometimes only the very end of the bowel is imperforated, and at other times the bowel for some little distance in front of the anus is also closed. Operation is the only resource, and in many instances, providing it is carried out early, results are satisfactory. If it is only a membrane of skin closing over the anus (when dung may usually be felt lying up against it) this layer of skin is simply grasped with the forceps and cut through with scissors. Reunion of the edges may be prevented by smearing the parts with a little bland ointment. In blockage of the passage for some way in, the trouble is more difficult to correct, and the adhesions must be broken down with care until the open passage is reached. It is really a case for an experienced skilful operator. The bowel must be smeared with oil to prevent adhesions recurring for a few days. Soapy warm enemas help the bowels to act and keep the passage clear.

"J. A. L." Abbeville, asks is there any method of mixing salt and sulphur to make a solid lick for horses.

Reply—This could be effected by mixing together the required ingredients in powdered form until they are thoroughly and evenly mixed together. This powder can then be made up into solid form by adding some mucilage of acenis and enough water to mix. Shape it into blocks and put it aside to dry hard.

Agricultural Bureau, Brinkworth, reports horse has lost one eye, the eyelids are swollen, and the eye is continually weeping.

Reply—Bathe the eye externally with a little warm boracic lotion, then instil into the eye a few drops of the following lotion:—Zinc sulphate, 2 drams; boracic acid, 1 dram; distilled water, 1 pint. This treatment should be repeated at least twice daily and ought to prove beneficial, although most probably the only permanent cure for the condition would be surgical attention. Keep the eye clean by the above treatment and flies will not be so troublesome.

Hon. Secretary, Agricultural Bureau, North Boorowie, asks cure for swamp cancer.

Reply—"Swamp cancer" does not exist in South Australia. If you will supply particulars of the trouble, we might be able to diagnose same and suggest a suitable treatment.

"B. G. L.," Cannawigara, reports horse 11 years old has bad cough, with nasal discharge; losing condition rapidly.

Reply—Give the horse a good physic to commence with. Have the following physic ball made and given:—Aloes bark, 5 drams; calomel, 1 dram; powdered nux vomica, 1 dram. This should work in 16 hours to 24 hours after giving it, and during the time it is working give the horse only bran mashes and green feed and take the chill off the water. Should the physic ball not work too well, a pint of raw linseed oil may be given two or three days after the ball. After the physic commences to work, and subsequently until the horse shows improved appetite, give the following powder quarter hour to half hour before each feed:—Powdered nux vomica, 1 dram; powdered gentian radix, 3 drams. You should get a supply of these powders made up, and to give them, mix the dose with a tablespoonful of treacle or molasses to make a stiff, sticky paste. Pick this up on one end of a flat piece of stick, and opening the horse's mouth with the other hand, smear it over the back teeth and tongue so that it sticks there and the animal has to lick it down.

Hon. Secretary, Agricultural Bureau, Marama, asks treatment for horse passing white worms.

Reply—Injections of salt solution per rectum will destroy any within the latter portions of the bowel, as they frequently are. Starving the horse for 24 hours and dosing with raw linseed oil, 1 pint, turpentine, 2ozs., will prove effective.

Agricultural Bureau, Wynarka, asks can a horse be cured of lockjaw and, if so, what is the treatment.

Reply—Many cases are on record of recoveries from lockjaw affecting horses. The general lines of treatment are as follows:—Place the affected animal in a darkened stall, without bedding and far away from other animals so that he may be in the quietest possible circumstances. The attendant must be very quiet and careful in handling him and avoiding undue noise or excitement. Do not rattle tins or buckets about or shout out to the horse. Exciting or disturbing the animal only brings on an increase of the spasms. Give the horse an early dose of about 6 drams to 8 drams, conjoined with 2 drams of belladonna extract. Give as a ball. If the animal's jaws are clenched and he cannot swallow, medicine cannot be given by the mouth and recourse must be had to hypodermic syringe. If possible, put 1 dram of belladonna extract every four hours to six hours on his back teeth so that he can lick it down. Clothe the neck and upper parts of the body in woolen blankets kept saturated with very warm water, keeping this treatment up for six hours to eight hours at a time. This has a beneficial action in combating spasm and pain accompanying it, and must be repeated as frequently as necessary. Keep water in front of him always, raised up so he can get it without undue effort. If he can feed, give sloppy feed, green feed, oatmeal gruel. If the infection is through a traceable wound, this wound must be thoroughly cleaned out and disinfected with carbolic acid or corrosive sublimate. Recovery without treatment would be very rare. Sometimes it has been said that this has happened, but in the untrained eye other conditions of disease might be mistaken for tetanus.

RATION FOR WORKING HORSE.

"I have just finished taking off a good crop of maize and also have left a fair amount of small cobs on the stalks, this I am going to cut and stack. I would like to know if, after putting it through the chaff cutter, I can feed it to my horse. I propose giving it in a proportion of half maize chaff with half lucern chaff and a small jam tin of crushed oats, four kerosene tins or more per day. This extract, from a letter written by a soldier settler on the Clutha Irrigation Area, who points out that he is anxious to reduce his chaff bill, but at the same time without in any way reducing the efficiency of his horse through incorrect feeding, was forwarded to the Superintendent of Experimental Work (Mr W. Spafford) for an expression of opinion. He replied as follows:—

You are very wise to endeavor to reduce your chaff bill as much as possible, but unfortunately, the material at your disposal is not too good for the purpose. Using Kellner's method of valuing foodstuffs ("The Scientific Feeding of Animals," by O. Kellner), in which all feeds are brought to one muscle unit,

POWER FARMING

The Question of the Hour.

A further list of questions put to us by farmers is given below, together with our replies.

Question—*Why is tractor farming cheaper than farming with horses?*

Answer Tractor farming is considerably cheaper than with horses, especially when we consider the many advantages it offers, namely:-

Timeliness, cheaper work, increased farming capacity, belt work, and release of land for profitable stock raising and other purposes. It is a means to better and larger yields per acre. Low cost of doing farm work is obtained with the use of the CASE tractor, because of the vast amount of power under the control of one man.

Question—*Will the CASE tractor enable me to do better ploughing?*

Answer With the tractor you can do better ploughing because you can regulate the depth of ploughing to the needs of your soil. You can regulate your speed to the ploughing conditions and can maintain the most effective speed at all times. You can rush the work, if necessary, to avoid bad weather, or to take advantage of a few good days in a bad or late season.

The tractor is a willing, tireless servant, and works steadily just so long as someone will drive it.

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Of the adaptability and
dependability of the



Kerosene Farm & General Purpose Tractor

Read this letter from a satisfied CASE owner:

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Included among the innumerable unsolicited testimonials we have received from CASE Tractor users all over Australia, may possibly be the experiences of farmers who have had to contend with conditions similar to those on your farm to-day. You can get the benefit of these experiences from our Book of Testimonials, Post Free on Application.

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POWER FARMING

The Question of the Hour.

Question—*Why does the tractor furnish more suitable power for all drawbar operations?*

Answer Because it has the power and speed required to do the best grade of work. It is capable of pulling a number of implements in combination. Because the CASE has the necessary pulling power the various implements can be set or adjusted to be most effective.

Question—*Then the CASE is a durable product, a safe investment?*

Answer Farmers throughout Australia now realise that the CASE Kerosene Farm and General Purpose Tractor is practically everlasting; there is no such thing as depreciation of usefulness. It is as lasting as its massive one-piece frame, because when parts wear, by reason of long service, every item is quickly and cheaply replaceable. Even cylinders can be renewed by fitting new barrels without taking out the engine. Farmers know, from the experiences of hundreds of CASE tractor users that the CASE is a safe investment.

Question—*I would like to see a CASE tractor at work. Where can I do this?*

We shall be pleased to give you the names and addresses of CASE tractor owners in your district, also copies of unsolicited testimonials from hundreds of farmers who use the CASE tractor if you will drop a line to—

Commonwealth Agricultural Service Engineers, Ltd.,
RICHARDS BUILDINGS, CURRIE STREET, ADELAIDE.



"That's the reason—the CASE!"

Here is an actual experience of neighboring farmers during last harvest in South Australia—crops were divided only by a fence!

ONE FARMER depended upon herself, and fearing that delay would mean late sowing, he got on to the land before it was in a fit condition for the drill.
Result: Harvest below average—SEVEN BAGS.

THE OTHER FARMER, a CASE Tractor owner, knowing that he could speed up and accomplish his sowing in a short time, waited until conditions were favorable.

Result: Crop above average—THIRTEEN BAGS.

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Branches in all States and Kadina

st-producing value, and expressed as "starch equivalents," shows your suggested mixture of equal quantities of lucerne chaff, chaffed maize stalks, and a little crushed oats to be unsuitable for a working horse, and to explain this, the following figures and statements are necessary:—

1. All values put on the various ingredients in the foodstuffs by Kellner have been derived from actual feeding tests, and apply to materials of good quality.

2. The feeding value of the foodstuffs mentioned, and of linseed cake, are as follows:—

Digestible Nutrients.

Foodstuff.	Dry		Carbo.			Starch Equivalent per 100 Lbs.
	Matter. Per cent.	Protein. Percent.	Fat. Percent.	Hydrates. Percent.	Fibre. Percent.	
Linseed cake	89.0	28.8	7.9	25.4	4.3	71.8
Crushed oats	86.7	8.0	4.0	44.8	2.6	59.7
Lucerne hay	53.8	10.9	1.1	19.1	12.2	24.5
Maize stalks	85.0	1.7	0.5	17.2	23.5	20.3

3. A draught horse weighing 1,400lbs. and doing medium work requires daily in the feed supplied—34lbs. dry matter, 16.24lbs. starch equivalent, and not less than 2.24lbs. of digestible protein.

4. From the table of feeding values set out above it can be shown that the proposed mixture of equal quantities of lucerne chaff and chaffed maize stalks, together with 3lbs. crushed oats per day, does not fulfil the requirements of a working horse, and this is set out below:—

Feeds in Ration.	Dry	Starch	Digestible
	Matter. Lbs.	Equivalent. Lbs.	Protein. Lbs.
3lbs. crushed oats	2.6	1.79	0.21
19lbs. lucerne chaff	15.9	4.65	2.07
19lbs. chaffed maize stalks	16.1	3.86	0.32
Totals for daily ration	34.6	10.30	2.63
Required daily by 1,400lb. horse	34.0	16.24	2.24

The above ration, supplied in sufficient quantity to give the required amount of dry matter, also supplies sufficient digestible protein, but falls much below the necessary starch equivalent, and as such is by no means a suitable ration for a working horse.

5. With the three feeding stuffs available, it is extremely difficult to produce a ration keeping to the two main requirements of dry matter and starch equivalent, and it can only be done by reducing the amount of chaffed maize stalks to a very small daily allowance.

6. The chaffed maize stalks can be made to occupy an important part of the daily ration by the addition of a small quantity of linseed cake, as is to be seen below:—

Feeds in Ration.	Dry	Starch	Digestible
	Matter. Lbs.	Equivalent. Lbs.	Protein. Lbs.
12lbs. crushed oats	10.4	7.16	0.96
5lbs. linseed cake	4.4	3.59	1.44
12lbs. lucerne chaff	10.0	2.94	1.31
12lbs. chaffed maize stalks	10.2	2.44	0.20
Totals for daily ration	35.0	15.13	3.91
Required daily by 1,400lb. horse	34.0	16.24	2.24

This ration provides the necessary dry matter and starch equivalents, and although more than the required amount of digestible protein is supplied, it can be utilised by the animal.

EUCALYPTUS ASH AS A FERTILISER.

Proposing to use it as a fertiliser on light sandy land, deficient in lime, the Cygnet River Branch of the Agricultural Bureau forwarded a sample of the ash produced from distilled eucalyptus leaf. The sample was submitted to the Director of Chemistry (Dr. W. A. Hargreaves), who states that it contained 26.8 per cent. of coarse material (unburnt twigs and lumps of soil), which was separated from the fine material by passing the sample through a 25-mesh sieve. The fine material contained 28.3 per cent. of lime (CaO) and 7.8 per cent. of water soluble potash (K_2O), and the original sample contained 20.7 per cent. of lime (CaO) and 5.7 per cent. of water soluble potash (K_2O). The Director of Agriculture (Professor Arthur J. Perkins) commented that he has no doubt that these ashes could be used with advantage in the circumstances referred to.

SORGHUM FOR DAIRY CATTLE.

To the Kringin Branch of the Agricultural Bureau, who sought advice as to the means of securing the highest possible returns from a small plot of sorghum to be cut and fed to dairy cattle, the Director of Agriculture (Professor Arthur J. Perkins) tendered the following advice:—“In the circumstances, very thorough winter cultivation is recommended; that is to say, the land should be broken up early, say in July if at all possible, and, if available, a dressing of 15 to 20 tons of stable manure per acre should be ploughed in. The land should be left in a more or less rough state until, say, the end of August or beginning of September, when it should be cultivated down and gradually worked up into a good seed-bed. It is unwise to sow the sorghum too early, because of its inability to germinate in a satisfactory manner until the soil is sufficiently warm for the purpose. Sorghum could probably be sown towards the end of September or during the month of October; it could, indeed, be sown very much later providing a thunderstorm fell to bring about germination, or artificial irrigation can be applied.

“Sorghum should be sown at the rate of 7lbs. to 10lbs. of seed to the acre, thoroughly mixed, by hand, with finely ground bone-dust, say about 1ewt. to 1ewt. to the acre. This mixture of bone-dust and sorghum seed should be put into a drill and drilled in every fourth drill opening; that is to say, leaving a space of 28in. to 32in. between the rows. It is a good practice to run a light roller over the plot immediately after seeding. When the ground is warm and sufficient moist, germination should take place at an early date.

“The land should be horse-hoed between the rows from time to time, and, of course, if water is available, it can be irrigated with advantage. The crop should not be cut for feeding purposes until the flower panicle shows well above the crop.”

GYPSUM AND ITS USES.

To a correspondent at Poochera the following information has been supplied by the Director of Agriculture (Professor A. J. Perkins):—

Gypsum is applied to soils for specific purposes, and its indiscriminate use cannot be recommended. The following are the chief purposes which gypsum is supposed to meet:—

(a) Soil barren from presence of sodium carbonate (black alkali of the Americans) is often treated with gypsum prior to leaching operations. The quantity used depends upon the amount of sodium carbonate present.

(b) Gypsum is sometimes used to improve the mechanical condition of stiff clays. Like burnt lime, it helps to open out heavy clay and checks a tendency to cake. One to two tons to the acre would be required, according to circumstances.

(c) Gypsum is sometimes used as an indirect manure to liberate potash locked up in the soil. It is used at the rate of 5ewts. to 10ewts. to the acre. It is of much advantage to wheat crops.

AN UNDESIRABLE WEED.

Tantanoola Agricultural Bureau forwarded a plant for identification. The Consulting Botanist (Professor T. G. B. Osborn, M.Sc.) has identified the plant as *Bartsia viscosa* (*Scrophulariaceae*), a Mediterranean weed, recorded as naturalised alien in Victoria, though not in South Australia.

It does not appear to be actively poisonous, but eaten in excess cannot fail to exercise injurious physical and even chemical action, and in any case its presence deteriorates pasture. It is more abundant in some seasons than others. Mowing to prevent seeding, resting pastures in spring, loosening and manuring soil, all aid in checking the growth. Cultivation will soon suppress the growth.

BROWN SPOTS ON PEARS.

Frances Brauch of the Agricultural Bureau asks the cause of and treatment for "brown spots on Duchess pear trees, which spreads with a rough surface over the fruit and has a bitter taste."

Reply.—The Horticultural Instructor (Mr. Geo. Quinn) reports in respect to these:

The "brown" patches scattered throughout the pulp of these pears consist of groups of lignified (woody) cells such as are normally found around the cores of pear fruits—more in some than others. Their presence can scarcely be called a disease, although some stimulus must have given rise to their formation where normal soft pulp tissue is usually located. The trouble has been observed in pear fruits on previous occasions, particularly in those of the Winter Bartlett variety, also in Winter Nelis. There is no remedy or preventive known to me, and if the fruits of the tree in question have consistently carried these defects, year after year, I advise the tree be cut off close to the ground and that grafts of some more desirable kind of pear be inserted.

APPLES FOR DAIRY COWS.

"If apples are fed to dairy cows, is the flow of milk increased or decreased?" asks the Meadows Branch of the Agricultural Bureau.

Reply.—The Dairy Expert (Mr. P. H. Suter) says provided the apples are fed in limited quantities, they will make the ration fed to the cows more palatable and will increase the milk flow. They should be sliced or pulped to remove danger of choking. The feeding value of apples is relatively low; they can only be of value in making the ration fed more palatable, and increase the milk flow slightly. If fed in large quantities, it is quite likely the milk flow would be decreased. They may be said to be equal to half the value of ensilage. If green and sour, they will reduce the milk flow; fed when eatable by children, say 10 lbs. morning and night, they will be relished by cows.

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One of our Wood and Iron Houses
(from a photo.)

Fence Droppers, Sheep Gratings,
Wool Tables, Beehives, &c.

AGRICULTURAL BUREAU OF SOUTH AUSTRALIA PRUNING COMPETITIONS.

For the fourth year in succession, a series of pruning competitions has been arranged by Branches of the Agricultural Bureau situated on the River Murray Irrigation Settlements.

The centres at which competitions are to be held, and the dates of same, are as follows:—

DATES OF FIXTURES.

District Competitions.—Mypolonga, Friday, July 4th; Moorook, Tuesday, July 8th; Waikerie, Wednesday, July 9th; Cadell, Thursday, July 10th; Berri, Tuesday, July 15th; Renmark, Wednesday, July 16th.

Championship Competition.—Berri, Thursday, July 17th.

As usual, the competitions will be divided into two classes, namely, Vine Pruning and Fruit Tree Pruning.

VINE PRUNING CLASS.

(1) In this class each competitor will be required to prune:—

(a) Five vines of the Muscat Gordo Blanco type; (b) five vines of the Zante Currant type; (c) five vines of the Sultana type.

(2) The first named (a) are to be pruned on the bush system.

(3) The second (b) are to be cordon or espalier spur pruned, at the discretion of the committee.

(4) The third named (c) are to be espalier rod and spur pruned.

(5) The competitors are required to twist and secure the rods to the trellis wires in the case of the Sultana vines.

(6) The time to be allowed for each class is determined by the various committees after examination of the vines and trees to be pruned in their respective districts. All competitors are required to cease work on expiration of time allowed.

The judges will allot points to each competitor in accordance with the scale of points set out below:—

Type.	Division.	Points.
<i>Gordo</i> —Selection of fruiting wood	60	
Shaping of vines	12	
Clean cutting	18	
<i>Currant</i> —Selection of fruiting wood	60	
Shaping of vines	18	
Clean cutting	12	
<i>Sultana</i> —Selection of fruiting wood	52	
Twisting the canes	20	
Shaping the vines	36	
Clean cutting	12	

In the event of it being found impossible to secure suitable bush vines, the committee may substitute espalier pruned Muscat Gordo Blanco or Doradillo vines in lieu thereof.

FRUIT TREE PRUNING CLASS.

(1) The competitors are required to prune one (or more, at the discretion of the committee) :—(a) peach tree; (b) apricot tree; (c) pear tree.

(2) Time allowed for each class is governed by the same conditions as for vines.

(3) Judges will allot points to each competitor in accordance with the scale set out below:—

Type.	Division.	Points.
<i>Peach</i>	Selection and treatment of fruiting wood	45
	Selection and treatment of leaders and shaping of tree	45
	Clean cutting	30
<i>Apricot</i>	Selection and treatment of fruiting wood	45
	Selection and treatment of leaders and shaping of tree	30
	Clean cutting	15
<i>Pear</i>	Selection and treatment of fruiting wood	36
	Selection and treatment of leaders and shaping of tree	36
	Clean cutting	18

CHAMPIONSHIP.

In addition to the district competitions referred to above, champion ship competitions will be held at Berri, on Thursday, July 17th. Championship events will be open to persons placed first, second, and third, respectively, in the district competitions, provided that each competitor in the championship competitions shall have secured an average minimum of 75 per cent. of the total marks awarded in the section for which he enters, and provided, also, that he shall have gained a certificate (*i.e.*, 80 per cent. of the marks awarded) in two of the three sections in the district competitions.

For the arrangements of the championship events, a committee consisting of one representative from the Branches of the Agricultural Bureau in the centres at which the competitions are being held was determined on. Mr. W. R. Lewis, of Berri, will act as Hon. Secretary.

SCALE OF POINTS FOR CHAMPIONSHIP.

In order more definitely to encourage speed, points are included for "time" in the scale of points for the championship events. This is as follows:—

Type.	Division.	Points
<i>Gordo</i>	Selection of fruiting wood	58
	Shaping of vines	10
	Clean cutting	16
	Time	6

Type.	Division.	Points.
<i>Current</i> —	Selection of fruiting wood	58
	Shaping of vines	16
	Clean cutting	10
	Time	6
<i>Sultana</i> —	Selection of fruiting wood	50
	Twisting the canes	18
	Shaping the vines	34
	Clean cutting	12
	Time	6
<i>Peach</i> —	Selection and treatment of fruiting wood	45
	Selection and treatment of leaders and shaping of tree	45
	Clean cutting	24
	Time	6
<i>Apricot</i> —	Selection and treatment of fruiting wood	44
	Selection and treatment of leaders and shaping of tree	28
	Clean cutting	12
	Time	6
<i>Pear</i> —	Selection and treatment of fruiting wood	34
	Selection and treatment of leaders and shaping of tree	34
	Clean cutting	16
	Time	6

SOLANUM ROSTRATUM.

A PROCLAIMED NOXIOUS WEED.

During the month, the Department of Agriculture has received from members of Branches of the Agricultural Bureau at Naracoorte, and at Green Patch, Port Lincoln, specimens of a plant which on examination was found by Professor T. G. B. Osborn, D.Sc., to be *Solanum rostratum* (Dun).

The first record of this weed in this State was a note by Professor Osborn in the *Journal of Agriculture*, of May, 1917. The plant was proclaimed noxious in December, 1921, but in the meantime had spread pretty widely over the State.

Professor Osborn describes it as an annual which grows erect with stems as much as 2ft. high, branching freely. It is thickly covered with yellowish star-shaped hairs, and also numerous yellow, spine-like prickles. These latter are often nearly half an inch long, and make

the plant very objectionable to handle, either green or dried. The leaves are oval in shape, irregularly lobed with two or three indentations on each side. They, too, are prickly along the main veins.

The flowering clusters are freely produced at the side of the stem, the flower stalks being exceedingly prickly. The calyx also is densely covered with prickles; it remains after the petals have fallen, and almost completely encloses the berry. The fruit thus is an intensely



Solanum Rostratum (Dun).

prickly burr, an inch or so in diameter, including the spines. It is thus unlike the tomato-like berry of the Sodom apple and other solanums.

The petals are five in number, and form a yellow star. One of the stamens is much longer than the remaining four, and curves upwards at the front (anterior side) of the flower. From this feature the specific name "rostratum" (beaked) is derived.

EYRE PENINSULA EXPERIMENTAL FARM HARVEST REPORT, 1923-24.

[By ROWLAND HILL, Manager.]

This farm consists of 3,041 acres, comprising sections 26, 27, and 28, in the hundred of Minnipa, and is situated 158 miles north of Port Lincoln, on the Port Lincoln to Cape Thevenard railway.

It is fairly centrally placed in relation to the whole of Eyre Peninsula, and is the point from which departmental activities in agricultural matters on that vast stretch of arable land will proceed.

The greater part of the farm will be arable when the natural growth has been removed. It consists of soil varying from light-colored, light-textured sands, carrying broom-brush and porcupine, to heavy calcareous soils, with a tendency to run together and set hard.

The bulk of this land is between these two extremes, and consists of calcareous soils of medium texture, carrying naturally big mallee, and large bushes as undergrowth. The land which has been used for cultivation on this farm has been grubbed, and so freed practically of all stumps and roots.

At the present time there are approximately 1,200 acres of this land cleared, and additions are being made to this annually.

The above-mentioned sections were dedicated a reserve for agricultural purposes in November, 1914, and work was commenced and a manager appointed on January 1st, 1915.

THE SEASON 1923.

During the months of January and February no rain fell, and right up to the end of April there had only been a total of 38 points. This made it necessary to do a considerable amount of the seeding in dry soil, but fair rains fell during May, there being 122 points recorded for that month. From this on, well-distributed rains fell during each month.

The total rain received during the year is not very high, being only 11.79in., but nearly all this rain fell during the period April to November—the total useful rains over these months being 10.15in. which fell during 72 raining days, with no rain registered for November. The usual extreme weather conditions during September and October were not experienced this year, which all helped towards the satisfactory yields harvested.

There was very little disease to be found in cereals during the season, except in one or two instances. All varieties filled well, and

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taken right through the yields were very satisfactory, especially so when it is taken into consideration that the majority of the area cropped was stubble land.

Harvesting conditions were anything but pleasant, and much delay was caused through damp and cold weather. Rains in December were the cause of some wheats being bleached, and I feel certain that wheat harvested after these rains lost considerably in weight.

When wheat is harvested after rain, there is always a chance of a few whiteheads in the sample, which would help to lighten the bags.

The following table sets out in detail the rainfall recorded, together with that registered at the farm since January, 1915:—

Rainfall Distribution at Minnipa, 1915-1923.

	1915.	1916.	1917.	1918.	1919.	1920.	1921.	1922.	1923.	Means
										1915-1923.
January	0.74	0.80	2.02	0.46	0.50	1.02	2.69	0.53	—	0.97
February	0.09	0.04	0.40	0.02	2.49	—	4.69	0.44	—	0.41
March	0.02	0.44	0.94	0.46	0.02	0.42	3.17	0.04	0.07	0.32
April	1.18	0.27	0.42	0.97	0.58	0.43	0.54	0.44	0.31	0.57
May	2.03	1.23	2.84	1.14	0.66	2.14	2.14	1.37	1.22	1.68
June	1.88	3.67	2.64	1.41	0.74	3.31	2.11	1.10	2.54	2.48
July	2.54	3.60	3.08	0.77	0.70	2.15	0.88	2.06	2.25	2.40
August	3.57	2.55	3.17	2.68	0.81	2.83	0.78	1.50	1.79	2.36
September	0.98	2.33	2.81	0.05	1.32	1.97	0.68	0.50	1.32	1.37
October	0.41	1.92	1.46	1.45	0.65	2.05	1.07	0.31	0.72	1.01
November	—	1.05	1.58	—	0.11	1.40	0.61	0.08	—	0.88
December	0.44	0.12	0.33	0.61	1.49	0.36	1.52	1.70	1.57	0.94
Totals	13.88	18.02	21.69	10.02	10.07	18.08	20.88	10.07	11.79	14.38
Total "Useful" rain, April-November ..	12.59	16.62	18.00	8.47	5.57	16.28	8.81	7.36	10.15	11.53

Distribution of "Useful" Rainfall. Minnipa, 1915-1923.

	1923.	Means 1915-23.
	In.	In.
Seeding rains (April-May)	1.53	2.21
Winter rains (June-July)	4.79	4.16
Spring rains (August-October)	3.83	4.63
Early summer rains (November)	nil	0.51
Totals	10.15	11.54

CROPS.

Seeding operations were commenced on April 10th with oats for hay, and completed on June 8th with wheat on new land. As in the previous year, there was not sufficient rain to germinate the wild mustard seed on fallowed land; hence additional seed was sown per

were with the hope of crowding the mustard out. This proved to be very satisfactory, and there was ample evidence in the divisions between varieties to show the effect of the thick sowing of cereal seed.

The total area, namely, 639.43 acres, cropped with cereals this year was made up as follows:—

	Acres.
Fallow land	224.27
Stubble land	405.70
New land	9.46
	639.43

From this it will be seen that the greater part of the area cropped was stubble land, which did exceptionally well to average 20bush. 51bs. of wheat. New land, unfortunately, was seeded late, and showed a yield of 15bush. 36lbs. per acre only.

HAY CROPS.

The hay cut was made up of Cape oats on fallow, Algerian oats on stubble, King's Red wheat on stubble and various headlands and corner pieces.

Cape oats were sown on April 13th on fallow at the rate of 80lbs. seed and 112lbs. 36 per cent. super per acre. This yielded a return of just over 2½ tons of hay per acre.

Algerian oats sown on April 10th on stubble land at the rate of 90lbs. seed and 112lbs. 36 per cent. super per acre yielded just a trifle over 1 ton per acre.

King's Red wheat sown on April 21st on stubble land at the rate of 90lbs. seed and 112lbs. 36 per cent. super per acre yielded 1 ton 10ewts. per acre.

Other pieces and headlands averaged about 1 ton 10 ewts. per acre.

A total of 132 tons was cut from 80.62 acres showing an average yield of 1 ton 12ewts. 84lbs. per acre, which is quite satisfactory.

The following tables will show in detail the hay yields for this season, and also for the period 1915-1923:—

Hay Yields, Minnipa, 1923.

Variety and Field.	Area. Acres.	Total Yield.			Per Acre.		
		T.	C.	L.	T.	C.	L.
Cape oats, Field No. 6 (fallow)	18.52	47	0	0	2	10	85
Algerian oats, Field No. 15 (stubble)	12.68	13	0	0	1	0	57
Headlands and corners, Field No. 6	8.97	14	0	0	1	11	24
Headlands, Fields Nos. 15, 2, and 5	12.88	16	0	0	1	4	95
King's Red, Fields Nos. 16 and 17	27.57	42	0	0	1	10	52
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
	80.62	132	0	0	1	12	84

Hay Returns, Minnipa, 1915-1923.

Year.	Total Rainfall.		"Useful"		Area.	Total Yield.	Yield Per Acre.
	In.	In.	Acre.	T. C. L.			
1915	13.88	12.59	148.00	280 0 0			1 17 2
1916	18.02	16.62	2.34	4 0 0			1 14 19
1917	21.69	18.00	47.85	82 10 0			1 14 24
1918	10.02	8.47	30.60	28 0 0			0 18 4
1919	10.07	5.57	55.13	35 0 0			0 12 5
1920	18.08	16.28	62.99	165 15 93			2 12 2
1921	20.88	8.81	41.11	56 7 56			1 7 33
1922	10.07	7.36	112.19	147 0 0			1 6 23
1923	11.79	10.15	80.62	132 0 0			1 12 4
Means	14.94	11.54	—	—			1 19 8

OAT CROPS.

The main oat crops for grain were sown on fallow at the rate of 80lbs. seed and 112lbs. 36 per cent. super per acre early in April. These were all sown under dry conditions, yet both Scotch Grey and Algerian came away well with the first rains, making very fine growth, and promising very heavy yields. The yields of 35bush. 20lbs. for Scotch Grey and 27bush. 5lbs. for Algerian are quite satisfactory, but not so high as these crops promised.

The remainder of the oat crops were on stubble land, sown at the rate of 70lbs. seed and 112lbs. of 36 per cent. super per acre. These were all small lots worked up from small parcels of seed sent here two years ago. Although some of the areas were small, they were large enough to enable one to form an opinion as to how the varieties are likely to yield in this district. Of these new varieties, the two which yielded highest returns for this year are certainly promising, not alone because of their yielding powers.

Kherson, the highest yielder, is early; holds its grain well, and has a rigid straw, which is not very tall.

Stark's Hooimaker is a tall oat suitable for hay; is early, and stools well, and also stands up very well.

Guyra has a plump brown grain, fairly fine straw which should make good hay, but is not perhaps as suitable for this district as some of the earlier oats.

Although Lachlan was not a very high yielder, I have great faith in this oat being a valuable variety for this district.

Burt's Early was very disappointing. It will, however, be given another trial.

Early Bathurst did not yield very heavily, but made fine autumn growth, and for this reason should make a good oat for sowing for early feed. The grain is a plump and attractive one.

Kelsall's is a very fair yielder, rather too short in the straw for hay, but should be a good oat for this district on account of its

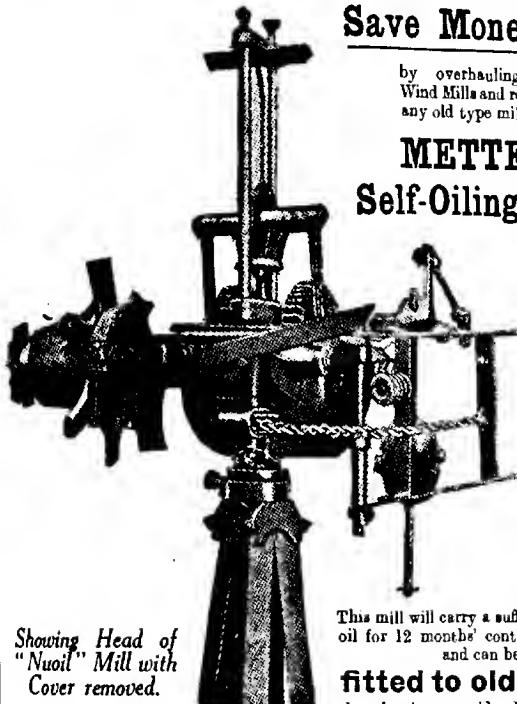
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short period of growth, and also its ability to withstand severe conditions. This is a very early oat, and has a long yellow grain.

Bathurst 4 is a good yielder and also makes splendid autumn growth, but shows a tendency to lodge.

These varieties, and also other new oats, are worth a fair trial and to give them this they must be tested over a period of years.

The following tables will show the individual yields of the varieties grown this year, and also the farm average over the period 1916-1923:—

Yields of Oat Varieties, Minnipa, 1923.

Variety.	Field No.	Area, Acres.	Total Yield, Bush. lbs.	Yield per Acre, Bush. lbs.
Kherson	6	.39	15 38	40 20
Stark's Hooimaker	6	.39	15 37	40 20
Kherson	6	1.48	58 32	39 29
Guyra	6	1.57	59 36	38 24
Mulga	6	.39	14 8	36 18
Scotch Grey	5	17.19	610 15	35 20
Bathurst 4	6	.68	23 11	34 9
Stark's Hooimaker	6	.88	29 7	33 8
Kelsall's	6	.79	24 38	31 25
Lachlan	6	2.73	79 11	29 2
Burt's Early	6	.71	19 37	28 3
Early Bathurst	6	1.28	34 31	27 7
Algerian	5 and 6	17.10	463 37	27 7
Burt's Early	6	.69	15 15	22 11
Farm average		46.27	1,465 33	31 27

Oat Returns, Minnipa, 1916-1923.

Year.	Total Rainfall, In.	Useful Rainfall, In.	Area, Acres.	Total Yield, Bush. lbs.	Yield per Acre, Bush. lbs.
1916	18.02	16.62	49.90	1,987 20	39 33
1917	21.69	18.00	10.39	461 22	44 17
1918	10.02	8.47	21.03	568 12	27 1
1919	10.07	5.57	14.75	85 16	5 32
1920	18.08	16.28	20.92	903 30	43 48
1921	20.88	8.81	15.65	440 2	28 5
1922	10.07	7.36	25.04	398 8	15 36
1923	11.79	10.15	46.27	1,465 33	31 27
Means	15.33	11.41	—	—	29 20

Seotch Grey and Algerian are the only two varieties grown over the period 1917 to 1923, and the mean yields for this period are shown in the following table:—

Oat Varieties, 1917-1923.

Variety.	1917. B. L.	1918. B. L.	1919. B. L.	1920. B. L.	1921. B. L.	1922. B. L.	1923. B. L.	Means. B. L.
Seotch Grey . . .	44 35	29 37	15 18	44 3	29 12	14 23	35 20	30 21
Algerian . . .	37 7	25 12	18 29	45 27	31 25	16 23	27 5	28 37
Farm average . . .	44 17	27 1	5 32	43 8	28 5	15 36	31 27	29 20

BARLEY CROPS.

Three varieties of barley were grown on stubble land cultivated ahead of the drill, and then harrowed after the drill. They were sown at the rate of 50lbs. seed and 112lbs. of 36 per cent. super per acre.

An average yield of 30bush. 28lbs. resulted, which is very satisfactory. Tunis No. 1 was the highest yielder. This variety has proved to be the best variety tested here up to date. It is very early, suitable both for grain and greenfeed.

The following tables will show individual yields for 1923, and details of all barley crops grown at the farm since 1917.

Yields of Barley Varieties, Minnipa, 1923.

Variety.	Field No.	Area, Acres.	Total Yield, Bush. lbs.	Per Acre, Bush. lbs.
Tunis No. 1	9	13.99	462 40	33 4
Roseworthy Oregon	9	7.46	226 12	30 16
Tunis No. 4	9	7.51	195 40	26 4
Farm average		28.96	884 42	30 28

Barley Yields, Minnipa, 1917-1923.

Year.	Total Rain. In.	Useful Rain. In.	Area, Acres.	Total Yield, Bush. lbs.	Yield Per Acre, Bush. lbs.
1917	21.69	18.00	7.13	233 34	32 39
1918	10.02	8.47	11.85	261 39	22 5
1919	10.07	5.57	8.07	19 24	6 7
1920	18.08	16.28	—	—	—
1921	20.88	8.81	10.08	192 1	19 2
1922	10.07	7.36	33.63	582 43	17 16
1923	11.79	10.15	28.96	884 42	30 28
Means	14.66	10.66	—	—	18 14

RYE CROP.

As in previous years, only a small area of rye was sown, and this was put down on stubble land which was cultivated ahead of the drill

and harrowed after it. The rate of sowing was 60lbs. seed and 112lbs. of 36 per cent. super per acre.

Seed was sown during the first week in June. The yield, 11bush., 53lbs. per acre, is quite satisfactory compared with other years. The crop was stripped for grain, and the straw was then cut for thatching purposes.

The following table will show the individual yields, and also the mean yield over the period 1917 to 1923:—

Rye Returns, Minnipa, 1917-1923.

Year.	Total Rain. In.	Useful Rain. In.	Area Acres.	Total Yield, Bush. lbs.	Yield Per Acre, Bush. lbs.
1917	21.69	18.00	3.86	61 54	16 2
1918	10.02	8.47	2.72	21 36	7 56
1919	10.07	5.57	1.92	2 38	1 22
1920	18.08	16.28	2.02	10 34	5 14
1921	20.88	8.81	1.82	11 47	6 23
1922	10.07	7.36	3.34	46 7	14 18
1923	11.79	10.15	2.61	29 44	11 22
Means	14.66	10.66	—	—	8 52

WHEAT CROPS.

The farm average for wheat this year, 22bush. 41bs. over an area of 480.97 acres, is quite satisfactory, especially when it is taken into consideration that the greater portion of this area, namely, 307.79 acres, was grown on stubble land.

Fallow Land.—The yields from fallow were also pleasing, and in this case, in considering this average of 24bush. 42lbs. per acre, it must be remembered that experimental plots are included in it, and these tend to reduce the total average. For example, such plots as "no manure" in the manurial tests, and the low seedlings in the "seeding" tests, all help to reduce an average.

Currawa, the highest yielding variety, was a fine crop, and the average of 34bush. 1lb. goes to prove what can be done on this land with fallow. This particular variety is certainly a suitable one for this district, and I feel certain that with settlers fallowing more extensively, much can be expected from this wheat. It is quite late enough for conditions prevailing here, and cannot be recommended for soils which have a tendency to dry out quickly, but the little extra moisture in fallow, and the more compact nature of the older soils, will suit it.

Other varieties which have done well are Caliph, Sultan, Late Guyas, and Queen Fan, as will be seen by the following table:—

Wheat Varieties on Fallow, Minnipa, 1923.

Variety.	Field No.	Area. Ares.	Total Yield.		Yield Per Acre, Bush. lbs.
			Bush. lbs.	Bush. lbs.	
Currawa	5	7.94	270	4	34 1
Caliph	2	10.97	327	38	29 52
Late Guyas	5	10.30	293	50	28 32
Sultan	2	10.98	311	37	28 23
Queen Fan	5	6.42	175	26	27 20
Walker's Wonder	2	.50	13	37	27 14
President (3cwt. super.)	2	1.90	51	0	26 51
Rajah	2	11.89	598	26	25 56
Silver Baart	5	8.56	220	15	25 47
President (2cwt. super.)	2	1.95	50	11	25 44
President (check)	2	1.32	33	47	25 36
President (1cwt. super)	2	1.95	48	32	24 53
King's White	2	6.43	157	19	24 28
Emperor (75lbs. seed)	2	1.86	45	23	24 24
Walker's Wonder	2	.	100	0	24 6
Caliph	2	2.08	50	4	24 4
Guyas	2	15.08	362	41	24 3
Fau	2	1.91	45	4	23 36
Emperor (90lbs. seed)	2	1.95	45	59	23 35
Federation	2	5.64	131	9	23 15
Felix	2	11.07	257	8	23 14
Baroota Wonder	2	1.40	32	42	23 14
President (1cwt. super)	2	1.95	45	7	23 8
Canaan	2	2.43	56	5	23 5
Emperor (check)	2	1.95	43	23	22 15
Currawa	2	.43	9	53	22 59
Canberra	2	.62	13	14	21 21
Emperor (60lbs. seed)	2	1.90	41	17	21 44
President (no manure)	2	1.86	38	0	20 26
Baroota Wonder	2	4.53	90	18	19 56
Emperor (50lbs. seed)	2	1.95	36	26	18 41
Emperor (40lbs. seed)	2	1.86	34	10	18 22
Stoutproof	5	15.44	261	16	16 55
Canaan	2	.69	11	27	16 36
Emperor (30lbs. seed)	2	1.86	30	26	16 22
Farm average on fallow, 1923		163.72	4,033	14	24 42

Unless otherwise stated, the rate of seeding for all varieties on fallow was 80lbs. seed and 112lbs. 36 per cent. super per acre.

Stubble Land.—The cultivation given Fields Nos. 16, 17, and 18 was as follows:—

Ploughed during February, cultivated and harrowed ahead of the drill, then harrowed again after the drill.

Seeding for the fields was at the rate of 90lbs. seed and 112lbs. of 36 per cent. super per acre.

Field No. 15 was cultivated early in April, but rain set the soil, and it had to be cultivated again ahead of the drill, and was harrowed after drilling.

All this field was seeded at the rate of 80lbs. seed and 112lbs. 36 per cent. super per acre.

Field No. 8 was cultivated, then harrowed ahead of the drill, and harrowed after drilling.

All wheat on this field was sown at the rate of 60lbs. seed and 112lbs. 36 per cent. super per acre.

Wheat Yields on Stubble Land, Minnipa, 1923.

Variety.	Field No.	Area. Acres.	Total Yield. Bush. lbs.	Yield Per Acre. Bush. lbs.
King's White	6	3.71	41 12	24 6
Currawa	8	51.10	1,167 31	22 51
Maharajah	18	24.26	538 51	22 1
Caliph	15	104.48	2,326 53	22 16
Red Russian	8	48.28	1,047 14	21 41
Maharajah	15	6.26	130 0	20 47
Emperor	15	16.80	302 29	18 1
King's White	16 and 17	54.90	861 47	15 42
Farm average on stubble		307.79	6,416 6	20 51

"New" Land.—Owing to the extreme difficulty experienced in burning the grubbed scrub, only 10 acres of Field No. 14 was ready in time to be seeded to wheat. This block of land was ploughed by the 6th of June, 1923, and on the 8th of the month was seeded with 80lbs. President wheat, 1ewt. superphosphate per acre, and yielded as follows:—

Wheat on New Land, Minnipa, 1923.

Variety.	Field No.	Area. Acres.	Total Yield. Bush. lbs.	Yield Per Acre. Bush. lbs.
President	14	9.46	150 46	15 56

The returns secured from the various soil treatments, as set out above, when grouped together, as in the next table, show the farm average for the year to be 22bush. 4lbs. per acre:—

Farm Wheat Average, Minnipa, 1923.

Where Grown.	Area. Acres.	Total Yield. Bush. lbs.	Yield per Acre. Bush. lbs.
Fallow	163.72	4,043 14	24 42
Stubble land	307.79	6,416 6	20 51
New land	9.46	150 46	15 56
1923 total wheat average ..	480.97	10,610 6	22 4

Taken over a period of eight years, the farm average for wheat is 19bush. 39lbs. During that period 1,871.75 acres have been reaped for grain. Taking into consideration that this includes a big range of varieties, different soil cultivations, numerous rates of seeding, some years of low rainfall, the prospects of much higher returns are bright once fallowing is more extensively practised.

During the period mentioned, the average annual "total" rainfall has been 15.33in., and the average annual "useful" rainfall 11.41in.

Wheat Yields, Minnipa, 1916-1923.

Year.	Total Rainfall.	Useful Rainfall. In.	Area. Acres.	Total Yield. Bush. lbs.	Yield per Acre. Bush. lbs.	
	In.	Bush. lbs.			Bush. lbs.	Bush. lbs.
1916	18.02	16.62	171.73	4,908 6	28	35
1917	21.69	18.00	76.65	1,999 34	26	3
1918	10.02	8.47	141.37	3,022 55	21	37
1919	10.07	5.57	112.52	980 40	8	43
1920	18.08	16.28	196.51	5,040 8	25	39
1921	20.88	8.81	219.96	2,058 24	9	21
1922	10.07	7.36	472.04	7,234 36	15	20
1923	11.79	10.15	480.97	10,610 6	22	4
Means	15.33	11.41		Average for 8 years ..	19	39

The following table will show that from the year 1918 to 1923, wheat on fallow showed an advantage over new land of just over 4 bush. per acre.

Wheat Yields From Various Soil Treatments, Minnipa, 1918-1923.

Year.	Total Rain.	Useful Rain. In.	Fallow.	New Land.	Stubble.	Farm Average. Bush. lbs.	
	In.	Bush. lbs.	Bush. lbs.	Bush. lbs.	Bush. lbs.	Bush. lbs.	Bush. lbs.
1918	10.02	8.47	23 44	11 12	18 14	21	23
1919	10.07	5.57	9 36	9 21	3 11	8	43
1920	18.08	16.28	30 8	22 38	13 5	25	39
1921	20.58	8.81	10 4	8 2	9 0	9	21
1922	10.07	7.36	12 37	16 3	—	15	20
1923	11.79	10.15	24 42	15 56	20 51	22	1
Means	13.48	9.44	18 29	14 22	—	17	5

EXPERIMENTAL PLOTS.

No new land was available for these tests this year, hence they were conducted on fallowed land.

Manurial Tests.—To determine the effect of varying dressings of superphosphate to wheat, plots were sown with quantities ranging up to 3cwt. per acre. The results are tabulated below:—

Manurial Tests on Fallow, Minnipa, 1923.

Variety:—President.

Manure per Acre.	Area. Acres.	Total Yield. Bush. lbs.	Yield per Acre. Bush. lbs.
No manure	1.86	38 0	20 26
½cwt. (36 per cent. super)	1.95	45 7	23 8
1cwt. (36 per cent. super)	1.95	48 32	24 53
2cwt. (36 per cent. super)	1.95	50 11	25 44
3cwt. (36 per cent. super)	1.90	51 0	26 51
Check	1.32	33 47	25 36

It will be noticed that the yield for the "no manure" plot is higher this year than it has ever been before, and this can be attributed to the fact that in all other years the test has been on new land.

and that it is on fallow this year which has been manured in previous years.

Over a period of seven years the 1cwt. dressing of super shows an advantage on the average of 5bush. 20lbs. per acre over no manure, as will be seen by the following table:—

Manurial Tests With Wheat, Minnipa, 1917-1923.

Year.	No Manure,	1cwt.		2cwt.		3cwt.		Farm	Total	Useful Rain.	
		B. L.	B. L.	B. L.	B. L.	B. L.	B. L.	Average.	Rain.	In.	In.
1917	15.35	26	48	29	39	31	17	31	9	26	5
1918	8.6	10	47	9	53	10	38	13	46	21	23
1919	2.44	6	12	7	47	10	7	9	57	8	43
1920	19.36	21	54	20	54	21	16	24	9	25	39
1921	3.13	6	58	8	35	8	53	8	24	9	21
1922	10.39	14	57	15	58	15	28	15	45	15	20
1923	20.26	23	8	24	53	25	44	26	51	22	4
Means	11.28	15	49	16	48	17	38	18	34	18	22
											14.66
											10.06

Testing the Effect of Different Quantities of Seed Per Acre.

Tests designed to ascertain the effect of different quantities of seed per acre were also carried out on fallow this year, because no new land was available.

Over a period of six years the average yields show a gradual increase in proportion to the rate of seeding up to 75lbs. The same is the case for the year 1923, where 75lbs. of seed per acre shows an increase of 8bush. per acre over a 30lbs. per acre seeding.

The following tables will show the results of this year's tests, and also over the period 1918-1923.

Rates of Seeding Tests With Wheat, Minnipa, 1923.

Variety:—Emperor.

Seed per acre.	Area. Ares.	Total Yield.		Yield per Acre. Bush. lbs.
		Bush. lbs.	Bush. lbs.	
30lbs. Emperor	1.86	30	26	16 22
40lbs. Emperor	1.86	34	10	18 22
50lbs. Emperor	1.95	36	26	18 41
60lbs. Emperor	1.90	41	17	21 44
75lbs. Emperor	1.86	45	23	24 24
90lbs. Emperor	1.95	45	59	23 35

Rates of Seeding Tests With Wheat, Minnipa, 1918-1923.

Yield per acre.

Year.	Total Rain.	Useful Rain.	30lbs.		40lbs.		50lbs.		60lbs.		75lbs.		90lbs.		Farm B. L.
			seed.	in.											
1918 ..	10.02	8.47	16	26	17	34	15	52	17	12	14	17	17	43	21 28
1919 ..	10.07	5.55	10	10	9	41	10	26	11	53	13	31	12	9	8 43
1920 ..	18.08	16.28	6	44	7	51	10	41	8	55	11	35	10	31	25 39
1921 ..	20.88	8.81	6	30	6	47	6	4	6	6	6	2	5	30	9 21
1922 ..	10.07	7.36	18	33	19	9	19	45	19	52	19	32	19	39	15 20
1923 ..	11.79	10.15	16	22	18	22	18	41	21	44	24	24	23	35	22 4
Means	13.49	9.44	12	28	12	54	13	25	14	17	14	54	14	51	17 5

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PICKLING TESTS.

During 1923 we commenced a series of tests designed to determine the relative effectiveness of a number of different methods of treating seed wheat for the control of Stinking Smut (*Tilletia tritici*).

The plots, numbered 1 to 5, were sown with seed treated in the manner set out as under:

Plot No. 1.—Sown with untreated seed.

Plot No. 2.—Sown with seed treated with Faulding's Dollman's Friend, at the rate of one packet of powder to 1½galls. of water, which was sufficient to pickle 6bush. of seed. This was pickled on a concrete floor and turned five times with a shovel, then spread out to dry, and sown the following day.

Plot No. 3.—Sown with seed pickled in an old churn with dry copper carbonate at the rate of 3oz. of powder to the bushel. It was possible to treat a bushel at a time in this manner. This seed was sown during the day on which it was treated.

Plot No. 4.—Sown with seed treated with a 1½ per cent. solution of copper sulphate, at the rate of 1gall. of solution to a bushel of seed. This was pickled on a concrete floor and turned five times with a shovel, then spread out to dry, and sown the following day.

Plot No. 5.—Sown with seed treated with a ¼ per cent. solution of formalin at the rate of 1gall. of solution to the bushel of seed. This was pickled on a concrete floor and turned five times with a shovel, then sown the same day.

FIELD INSPECTION.

The crops were inspected directly after germination, during the last week in July, and when they had reached maturity. As a result of these inspections the following observations were made:

Plot No. 1 (untreated seed).—Came away well, there being a very good germination, and no check whatever in the growth. Stooling was very good right through the plot. There was evidence of smut right through it, but only a trace, and not as high a percentage as in the copper sulphate test. It was particularly noticeable in this plot that there were not the number of small heads commonly known as second growths that there were in the other plots.

Plot No. 2 (Faulding's Dollman's Friend).—This plot came away splendidly, and showed ahead of all the other plots for the first six weeks, but it then had a decided check in the growth. The crop appeared healthy enough, but did not move anything like as quickly from then on. The germination was only fair. The stooling was moderate. The heads were very well developed. There was a trace of smut through it, and the crop was a little later ripening than the remainder.

Plot No. 3 (copper carbonate).—This plot came away with the untreated plot, but the germination was not so good. The stooling was very fair, and the development of head good; but the crop shows as much smut as the untreated plot.

Plot No. 4 (copper sulphate).—This was the last plot to come away, although it had the advantage of being seeded several days before the untreated plot. The germination was fair, and the stooling quite good. There was more evidence of second growths in this plot than in any of the others. There was also considerably more smut in this plot than in any of the others.

Plot No. 5 (formalin).—This came away ahead of the copper sulphate treatment which was the next plot to it. It showed a very fair germination, good stooling, and the development of the heads was very fair. This plot was more free from smut than any of the others. The only smut to be found in it was an odd head or so right through it.

*Wheat Yields From Various Pickling Tests on Stubble Land,
Minnipa, 1923.*

Variety:—Caliph.

Plot.	Pickling treatment.	Acres.	Total Yield. Bush. lbs.	Yield. Bush. lbs.
No. 5.	1 per cent. solution formalin . . .	29.61	647 23	21 52
No. 4.	1½ per cent. solution bluestone . . .	20.98	431 58	20 35
No. 3.	3ozs. copper carbonate to 1bush. of wheat	33.64	782 58	23 16
No. 2.	Faulding's Dollman's Friend . . .	4.30	109 41	25 30
No. 1.	Untreated seed	15.95	354 53	22 15

COMMENTS ON THE PICKLING TESTS.

All the fungicides used evidently had a retarding effect on the germination of the grain. No one of them resulted in a crop absolutely free of smut. Formalin was the most successful, the crop grown from seed treated with this containing a mere trace of smut only. The use of Dollman's Friend apparently resulted in a lengthening of the period between germination and maturity.

In all plots on which smut was found, it was worse on patches of land where the soil was hard and the cultivation had not been so good. With the copper carbonate treatment there was no evidence of corrosion on the drill at the time the seed was put through it, but two months later, when the drill was being used for seeding other crops, parts of it had corroded.

WHEAT CROP COMPETITION.

GOVERNMENT SCHEME FOR ENCOURAGING.

With the object of encouraging wheat crop competitions in South Australia, the Government has offered to assist groups of Branches of the Agricultural Bureau who are willing to arrange competitions, by undertaking to help Branches to secure suitable judges, to provide rail fares for judges to travel to and from the place of competition, and also to make a monetary grant of 10s. for each entry received in the competition, provided an amount equivalent to such grant is collected by the Branches. This is limited to £25 in any one year to any one group of Branches. The proposal has been made the subject of considerable discussion at various Conferences of the Agricultural Bureau held during the current year, and at these Conferences it was determined to arrange competitions in the areas set out below:—

District No. 1.—The area served by the lines of railway between Owen and Wirrabara.

District No. 2.—The country east and adjacent to the Gulf, between Kadina and Baroota.

District No. 3.—The area served by the lines of railway between Hamley Bridge and Spalding, and Hamley Bridge and Farrell's Flat.

District No. 4.—The wheat-growing area to the west of the line between Salisbury and Balaklava.

District No. 5.—The area in the hundreds of Wallaroo, Kadina, and Kulpara, south of the line between Wallaroo and Melton, and the hundreds of Tiparra, Clinton, Kilkerran, Maitland, and Cunningham.

District No. 6.—The wheat-growing area south of what is generally known as the Maitland District.

Competitions in each of these districts will be conducted by Committees consisting of one representative selected by each Branch of the Agricultural Bureau in the district. These committees have already been formed, and the following gentlemen have been selected as Secretaries of the respective competitions:—

District No. 1.—Mr. A. O. Badman, Yacka.

District No. 2.—Mr. A. M. Lawrie, Nelsaby.

District No. 3.—Mr. A. H. Fuller, Tarlee.

District No. 4.—Mr. W. J. Marshman, Owen.

District No. 5.—Mr. G. F. Pearce, Maitland.

District No. 6.—Mr. G. L. Tucker, Brentwood.

Each district will be a self-contained unit, and will, within certain limits, govern its own affairs. To be eligible for Government assistance, however, the districts will need to conduct their competitions to the satisfaction of a Committee consisting of the Director of Agriculture (Professor Arthur J. Perkins), the Superintendent of Experimental Work (Mr. W. J. Spafford), Chairman of the Advisory Board of Agriculture (Mr. W. S. Kelly), and the Secretary of the Advisory Board of Agriculture (Mr. H. J. Finnis).

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(Late of Federal Taxation Dep't.).

CONDITIONS OF ENTRY.

The competitions are not confined to members of the Agricultural Bureau, but it is hoped that farmers generally throughout the State will take the opportunity of submitting entries. Each crop entered must be of an area of not less than 50 acres. Entries need not necessarily be confined to one variety, but the maximum number of varieties that will be permitted in one entry is three. Each entry must be in one block or paddock. Should, however, a person desirous of submitting a crop for competition not have an area of 50 acres or more in one paddock or block, he may submit as an entry the whole of one paddock or block of wheat, together with an area of one other paddock or block, sufficient to make up the minimum area of 50 acres. The crops entered for competition will be judged to the following scale of points:—Apparent yield, 60; trueness to type, 10; freedom from disease, 10; freedom from weeds, 15; evenness of crops, 5—total, 100. Competitors will be required to supply the judge with details in respect to the following:—(1) The area of each variety constituting the entry; (2) the date of seeding; (3) the rate of seeding; (4) the nature and quantity of any fertiliser used.

Other competition districts are in course of formation, and it is anticipated that these will be finalised in the immediate future.

These should cover the principal wheat-growing areas of the State, and it is, therefore, expected that a very considerable number of entries will be received.

FODDERS IN PLACE OF WHEAT.

A farmer with a holding situated between Balaklava and Long Plains, the soil of which, according to his description, is of a sandy nature and inclined to drift, has intimated that he proposes to grow fodder plants in preference to wheat. He has sought the guidance of the Department of Agriculture on the proposal, and asked for information with respect to lucerne, Sudan grass, and Johnson grass. For his guidance, the Superintendent of Experimental Work (Mr. W. J. Spafford) has supplied the following information:—

"Sudan grass, like the other sorghums, is essentially a crop for good soils, and if maximum returns are to be secured without irrigation, sub-tropical to tropical conditions are necessary. When grown in semi-arid conditions, good crops can be secured with the aid of artificial irrigation, and in temperate climate where sufficient rain falls in the summer, success can be secured by growing these crops in rows, and keeping the land between the rows well cultivated throughout the growing period. In your district Sudan grass could not be depended upon, by reason of the scantiness of summer rainfall in average years."

"To convert your farm into a livestock proposition, I would suggest that lucerne will be the most useful fodder plant you can grow, and in a general way, I should say the farm could be economically worked as follows:—

1925.—*Field No. 1.*—Rye grass and clover (seeded). *Field No. 2.*—Oats and barley. *Field No. 3.*—Lucerne (seeded). *Field No. 4.*—Lucerne (seeded). *Field No. 5.*—Pasture. *Field No. 6.*—Rye grass and clover (seeded).

1926.—*Field No. 1.*—Rye grass and clover. *Field No. 2.*—Lucerne (seeded). *Field No. 3.*—Lucerne. *Field No. 4.*—Lucerne. *Field No. 5.*—Pasture. *Field No. 6.*—Rye grass and clover.

1927.—*Field No. 1.*—Lucerne (seeded). *Field No. 2.*—Lucerne. *Field No. 3.*—Lucerne. *Field No. 4.*—Lucerne. *Field No. 5.*—Rye grass and clover (seeded). *Field No. 6.*—Rye grass and clover.

1928.—*Field No. 1.*—Lucerne. *Field No. 2.*—Lucerne. *Field No. 3.*—Lucerne. *Field No. 4.*—Rye grass and clover (seeded). *Field No. 5.*—Rye grass and clover. *Field No. 6.*—Lucerne (seeded).

1929.—*Field No. 1.*—Lucerne. *Field No. 2.*—Lucerne. *Field No. 3.*—Rye grass and clover (seeded). *Field No. 4.*—Rye grass and clover. *Field No. 5.*—Lucerne. *Field No. 6.*—Lucerne.

1930.—*Field No. 1.*—Lucerne. *Field No. 2.*—Rye grass and clover (seeded). *Field No. 3.*—Rye grass and clover. *Field No. 4.*—Lucerne (seeded). *Field No. 5.*—Lucerne. *Field No. 6.*—Lucerne.

1931.—*Field No. 1.*—Rye grass and clover (seeded). *Field No. 2.*—Rye grass and clover. *Field No. 3.*—Lucerne (seeded). *Field No. 4.*—Lucerne. *Field No. 5.*—Lucerne. *Field No. 6.*—Lucerne.

1932.—*Field No. 1.*—Rye grass and clover. *Field No. 2.*—Lucerne (seeded). *Field No. 3.*—Lucerne. *Field No. 4.*—Lucerne. *Field No. 5.*—Lucerne. *Field No. 6.*—Rye grass and clover (seeded).

1933.—*Field No. 1.*—Lucerne (seeded). *Field No. 2.*—Lucerne. *Field No. 3.*—Lucerne. *Field No. 4.*—Lucerne. *Field No. 5.*—Rye grass and clover (seeded). *Field No. 6.*—Rye grass and clover.

"The rye grass and clover would consist of a mixture of 10lbs. Wimmera rye grass, $\frac{1}{2}$ lb. Subterranean clover, and 10lbs. King Island melilot per acre.

"Lucerne would be seeded at the rate of about 10lbs. seed per acre. The field seeded with lucerne would receive about 4cwt. superphosphate per acre, and the one seeded with rye grass and clover a dressing of about 2cwt. superphosphate per acre.

"As can be clearly seen from the plan of cropping as set out above, after the first year only one field would be sown with lucerne and one with rye grass and clover each season, and the lucerne would remain on each field for four years, then be ripped up and carry the rye grass and clover for two years before lucerne was again sown.

"The manure would be applied to the land any time after the soil was cultivated, and the seed of both lucerne and the mixture would be broadcasted as soon after the first rain in the autumn as was possible."

TOBACCO CULTURE.

ACTIVITIES IN VICTORIA.

The Field Officer of the Department of Agriculture (Mr. S. B. Opie) recently paid a visit to Victoria for the purpose of acquainting himself with details of tobacco growing, and more especially in relation to curing as practised in that State. He was courteously received by officers of the Victorian Department of Agriculture, Mr. T. J. A. Smith (Tobacco Expert) and Mr. G. E. Marks (Assistant Tobacco Expert), and was given the opportunity of visiting a number of the principal tobacco areas in that State. In the course of a report supplied to the Director of Agriculture on his return to Adelaide, Mr. Opie said, *inter alia*:—"In the Ovens Valley are the towns of Bright and Myrtleford, the centres of the chief tobacco-growing districts of Victoria. Bright is situated at the head of the valley and Myrtleford some 15 miles lower down. This valley, running past the foot of Mount Buffalo, consists of sandy river flats, overlying a coarse river wash, with the River Ovens supplying water for irrigation, when necessary. Much of these flats in the past has been dredged for gold, and this has disturbed the soil from the agricultural view point; nevertheless, very fine areas remain. It is on these areas that tobacco is being cultivated. Other crops popularly grown here are maize for corn, broom millet, hops, &c. In company with Mr. Marks and Mr. Howell (who is adviser for the British Australian Tobacco Company in the growing and curing of the tobacco crop), I visited one of the best and largest tobacco-growers in Victoria. This gentleman, Mr. Macnamara, owns a large area of these river flats. On these, maize has been popular crop, but the returns from this crop are only about £10 per acre, although it grows to a height of .10ft. and 12ft. Last year this grower had some 30 acres of tobacco which he harvested. He obtained 12 tons of cured leaf, which sold for an average price of 2s. 4d. per lb., returning over £100 per acre. His best leaf brought 3s. per lb. This year, unfortunately, blue mould has reduced the crop considerably, attacking the plants in the field. This grower mentioned that he found no more payable crop than tobacco, nor one so easily produced when guided by experience."

"Other growers were met, who had not such fortunate experience with the cultivation of tobacco, brought about probably by insufficient knowledge of the district and the crop.

"Tobacco growing in the Stawell area is being conducted on a totally different kind of soil from that growing tobacco in the Ovens Valley district. The locality is situated at the foot of the Grampian Mountains, some 14 miles south-west of Stawell. This soil is of a very sandy nature, similar to some soil found at McLaren Flat in this State. It is here that great hopes are being realised for the production of the lemon-yellow leaf. It is necessary here to manure very heavily, using up to from 6cwt. to 7cwt. of super per acre. I was able to examine some of the cured leaf, and it was of a fine texture, not having the coarse feeling of tobacco grown on heavier ground."

£10 10s. CLEAR PROFIT From 15 back yard fowls Thanks to Karswood Poultry Spice



Week in and week out new users are coming to realise the value of Karswood Poultry Spice. Steadily the great army of constant users (now more than 500,000 strong) is being

added to. Almost daily we receive letters from successful backyard poultry keepers. Each one has a message for YOU.

Why continue to feed hens and buy eggs when at the cost of a halfpenny per day for every dozen fowls you can have a good winter supply at your own back door. Read these letters and resolve to make the test.

£10 10s. CLEAR PROFIT.

"Mahnoo," 5, Federal Avenue,
Ashfield, March 19th, 1924.

Dear Sirs—I am sending you some results from feeding with Karswood Spice. I commenced feeding with Karswood last February (1923), and the effect was quickly noticeable.

I started with seven White Leghorns and seven Black Orpington pullets, and one old Black Orpington hen, and no rooster. From February 8th to February 8th this year they laid 2,565 eggs, or an average of 171 eggs each for 12 months, the highest production was 310 for one month, and they showed a profit of £10 10s. Facts speak for themselves.

(Signed) P. VEEVERS.

INCREASED EGG SUPPLY.

9, Falcon Street, Parnell,
Auckland, N.Z., March 23rd, 1924.

Dear Sirs—I have been keeping poultry for about four months and have used your Spice for about three months and would not be without it, as it keeps the birds in good health and increases the size and number of eggs.

(Signed) MRS. LOADER.

KARSWOOD POULTRY SPICE "Makes 12 Hens lay for ½d. a day"

25 A DAY FROM 29 HENS.

243, Riversdale Road, Auburn,

December 4th, 1923.

Dear Sirs—I have been using Karswood Poultry Spice for some time and find the results everything to be desired, and have recommended it to quite a number of poultry breeders. At present I have 29 hens and have an average of 22, 23, and 25 eggs a day since using your spice.

(Signed) Miss L. DUKEAU.

MAKES THEM LAY THROUGH WINTER.

T. J. Sharpless, Box 15,

Manitoba, March 3rd, 1924.

Please forward me four packets of Karswood Poultry Spice, the pound packets I think they are. I used it last year, and I got some from you for my neighbors, and they all say it is very good, especially this time of the year to help the hens over the moult. I was a bit afraid at first that it might do the hens harm, but it does not seem to hurt them; it makes them lay big eggs and more of them. It is also very good to make them lay through winter.

(Signed) T. J. SHARPLESS.

MAKE THIS TEST—

Go to your local grocer, store-keeper, or produce dealer. Get a 1s. packet of Karswood Poultry Spice. Test it for a fortnight on half a dozen hens. Do not expect an immediate avalanche of eggs. Karswood works naturally, not suddenly. Within a fortnight or three weeks you will notice a decided improvement in the health, virility, and productiveness of the Karswood birds.

NOTE THE ECONOMY.

- 1s. packet supplies 20 hens 16 days.
- 2s. packet supplies 20 hens 32 days.
- 1s. tin (7lbs.) supplies 140 hens 32 days
- 14lbs. Hns, 25s. 28lbs. tins, 48s.

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ORCHARD NOTES FOR SOUTHERN DISTRICTS.

[By C. H. BEAUMONT, Orchard Instructor and Inspector.]

Have you had a look at the fruit in the cool store? Have you asked that it be examined? If you have not, you are courting disaster. Having the fruit in the store is not a guarantee that it will keep good indefinitely; a very great deal depends on its condition when sent to the store, so go through it, handle the fruit very carefully, realise on the mature fruit, and repack only the most fit. Get on with the pruning; heap up the cuttings as you go. It is impossible to give instructions here, but you have an instructor in your district; send for him, or go to the State Experiment Orchard, at Blackwood, or Hackney Road, City, and have methods demonstrated to you. The principle of pruning is to form the young tree, and afterwards to ensure a supply of bearing wood. Do not prune sick trees with the others, leave them until last; trees affected with woolly aphid should be dealt with in a similar way.

Where woolly aphid has been a nuisance, give the trees a thorough wash with a crude petroleum emulsion; it is cheap, it is effective. It will also help to rid the trees of red spider by destroying the eggs.

Plough as early as you can; plough to the trees, thus leaving a furrow along every row; this will do away with surplus water without damage or much loss of soil; plough lightly near the trees, and as deeply as you can when away from them. Leave the soil in the clod until the second ploughing.

It is absolutely necessary to keep water from lodging about the trees, especially citrus. Get on with planting; do not plant any weaklings, send them back to the nursery. Growers of celery should rake up all waste for burning or to be deeply buried, in this way they may control the rust to a great extent.

Hunt up all the codlin left in the orchard; take away old bandages; remove loose bark; dig out all the rotten wood; and remove any rubbish left about the trees.

On wet days have a thorough clean up of the packing shed, and dip used cases in boiling water.

Do not waste olives; pickle them or make oil. Write to the department for methods if you do not know how to go about it.

STERILITY IN CATTLE.

[By A. H. ROBIN, B.V.Sc.]

Sterility, or failure in cows to stint, may be absolute or permanent—where reproduction is impossible at all times, or temporary, where reproduction occurs irregularly. Many causes exist to produce either one of these conditions, some being direct, others indirect causes. The most common are:—

(1) *Contagious Abortion*.—This is one of the most prevalent causes operating. It is probably indirectly responsible for 50 per cent. of the cases of sterility in cattle. In herds affected with contagious abortion, sterility is much more prevalent than in herds free from the disease. The presence of this infection, which in the pregnant animal locates itself in the uterus or breeding bag, causes abnormal changes to take place in that organ, so that after aborting or calving at the normal time, it is more liable to be subject to further secondary infection, as the result of which the cow does not become stunted again for varying periods, and only after a considerable amount of treatment. Sometimes it may never breed again.

As a rule, when cows are affected with contagious abortion, when the calf is slipped or is dropped at the normal time, as is often the case, the membranes are retained, and have to be manually removed. There is also present a considerable amount of dirty, brown, yellow, jelly-like discharge, which persists for several weeks, even under suitable treatment. Until this discharge ceases, the cows fail to get in calf again even though they may be returned to the bull time and time again. This contagious abortion disease is more prevalent than cow owners will admit, and every case of abortion (in particular) should be looked upon with suspicion, and treated accordingly.

(2) Where contagious abortion is not present to carry on its evil work, the general septic infection that occurs after almost every normal calving is a potent factor in the production of a subsequent sterility. If early and careful attention is given, it is usually readily amenable to treatment, but if neglected, permanent sterility will often ensue, and every cow after calving should be treated with anti-septic douching, either to act as a preventive of infection occurring, or to arrest it promptly if it has happened. If cow owners would more commonly carry out this simple measure, it would result in a considerable diminution of the number of cows that do not readily get in calf when returned to the bull. Irrigation of the breeding bag and vagina should be carried out at the most, within a day or two of calving, and continued daily, or every second day, until the discharge ceases. Hot Condy's solution is very effective, but it must be

used very weak. The great fault with those who use it is that they use it far too strong. The solution should be only of a faint pinkish tinge, and not the color of strong tea, four or five crystals to a bucketful of water is sufficient. Another safe and effective remedy is the use of a hot normal saline solution, which every cow owner can readily make up in his own home by using one teaspoonful of common salt to each pint of water.

(3) Any other condition causing inflammation of any part of the genital tract may act as a cause of sterility. A fairly common lesion is a granular inflammation of the back passage (vagina), and this, if present, must be treated and reduced, after which the cows will usually get in calf again. Antiseptic irrigation is suitable treatment, but the solution must be weak, so as not to cause irritation. Use 1 per cent. warm solution of lysol until excessive sensibility disappears, and then use solutions of zinc sulphate 75 grains to the pint.

(4) Misplacement of genital organs, injury and hardening of the neck of the breeding bag (which often happens as the result of wounding during the act of calving), disease of the ovaries, &c., are all causes of sterility. These are conditions which can only be handled under expert supervision.

(5) Old age and constitutional disease also play their part in the production of sterility.

(6) Acidity of the normal vaginal secretions is a condition which frequently operates against stunting cows, by having a damaging effect on the male germ after it has been deposited in the female genital passage by the bull. This acidity, if present can suitably be treated by douching with a solution of bi-carbonate of soda shortly before the cow goes to service.

(7) These are the most common causes of sterility in cows, and a thorough examination must always be made of the female genital organs in an endeavor to arrive at the cause operating, and to determine suitable treatment. I have mentioned, wherever possible, suitable treatment which can readily be undertaken by cow owners in an endeavor to set things right. Beyond these few remedies suggested, it becomes a matter for an expert veterinary surgeon only to handle the case effectively. Even with these simple remedies, care must always be exercised in handling them, otherwise a simple case of temporary sterility may be turned into a case of permanent sterility. Feeding cows on a diet overrich in protein, with a small quantity of rough herbage, is a factor which predisposes to sterility, and the cause suggests its own remedy. This practice is sometimes adopted by dairymen for the purpose of causing heavy milk production, and in preparing cattle for show purposes.

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January and July, 1921.

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SHEEP AND STINKWORT.

"Farmers know that the stinkwort is the direct cause of the deaths," writes the Hon. Secretary of a Branch of the Agricultural Bureau, by way of preface to the following questions recently submitted:—"Why does stinkwort kill ewes in lamb and hoggets more readily than the general flock? Why does the stinkwort cause death?"

To these queries Mr. A. H. Robin, B.V.Sc., writing on behalf of the Stock and Brands Department, replies:—There is much yet remaining to be cleared up in connection with this vexed question of stinkwort poisoning in sheep. We agree with the sheepowners that this weed is responsible for an annual loss in his flocks (possibly a considerable loss at times), but are not over ready to agree with the common idea prevailing in his mind that the loss is due to poison in the plant. There is a poisonous principle contained in the weed—that fact is definitely established by chemical analysis—and it is also an established fact that if this poisonous principle is given to sheep in large quantities and repeatedly, it will produce serious effects. But this poison is found to be present in the plant only in small quantities, and this fact would seem to work against the idea of death being due to its specific poisonous effects, for the animal would have to eat an enormous amount of the natural plant in order to absorb out of it sufficient amount of poison to anything like approach the large amounts experiments have shown to be necessary to induce the untoward effects. Certainly the poisonous principle taken in with the plant in small quantities by grazing the animals on it, may play a part. It would seem more probable that the ingestion of the plant would result in serious digestive upset, as a result of which, secondary conditions present in the animals' bowels—such as bacterial infection—would have the way opened up to produce that morbid condition, which is the actual cause of death—the weed being only the primary contributory cause. Ewes in lamb and young hoggets would, to some extent, be more prone to digestive disturbance than matured males and adult empty ewes. We have noticed instances, though, where stinkwort appeared to be the factor primarily operating to cause loss of animals of both sexes of all ages, and both pregnant and empty ewes. We do not agree with sheepowners in their more or less dogmatic opinion that their losses are so often due to stinkwort, but are certain that in many instances the losses are due to some other distinct morbid condition which has not been recognised—or for which it has been mistaken—and wrongly ascribed to stinkwort. (That which at times seems most apparent is not always correct). Much loss in sheep is due annually in this State to a braxy-like disease a specific bacterial disease—the symptoms of which are very often wrongly attributed to stinkwort, as they in many ways simulate those symptoms which are generally accepted as being symptoms of the latter. Unfortunately, we are not able to give anything definite statistically as to the prevalence of this braxy-like disease, due to the fact

that so many of the losses in sheep are not officially reported or recorded, and the opportunities offered thereby for investigational work lost. Pregnant ewes are subject to a morbid condition confined to them and known as pre-parturient toxæmic paralysis, which manifests itself in animals heavy in lamb, and usually carrying twin lambs. Again, the symptoms of this condition resemble very much those symptoms considered by most sheepowners to be stinkwort trouble, and give rise to further instances of mistaken identity. Erroneously attributing deaths in this way to be due to stinkwort might engender the idea which is commonly amongst sheepowners—that stinkwort is more prone to attack ewes in lamb than other individuals of the flock, particularly empty ewes. Through similarity of the general symptoms usually observed by the average stockowner, nearly all losses of sheep in a district may be attributed by him to being due to one and the same cause, whereas the several distinct conditions mentioned may all, or at least more than one of them, be operating.

GLENCOE HERD TESTING ASSOCIATION.

RESULTS OF BUTTERFAT TESTS FOR APRIL, 1924.

Herd No.	Average No. of Cows in Herd.	Average No. of Cows in Milk.	Milk.				Butterfat.			
			Per Herd during April.	Per Cow during April.	Per Cow October to April.	Per Herd during April.	Per Cow during April.	Per Cow October to April.		
3 A	17	16.70	10,767	633.35	5,556.83	473.53	27.85	232.91		
3 B	16	15	5,580	348.75	2,719.77	230.04	14.38	119.21		
3 C	12	8	4,170	347.50	4,674.10	191.18	15.93	187.78		
3 D	11	9	6,315	574.09	4,088.62	252.66	22.97	157.72		
3 E	14.23	10.60	8,196	575.96	1,276.09	371.80	26.13	181.50		
3 F	9	8	2,970	330.00	4,222.42	141.03	15.67	173.53		
3 G	13	10.67	6,245	480.38	4,736.35	246.03	18.93	179.18		
3 H	16	14.80	4,820	301.25	3,836.55	209.05	13.07	149.30		
3 I	14	14	7,200	514.28	4,108.43	312.95	22.35	172.41		
3 J	16.07	14.60	4,875	303.18	2,860.42	247.52	15.40	130.52		
3 K	22	20.47	8,951	406.86	3,981.45	397.08	18.05	168.29		
3 L	22.93	10.97	5,811.5	253.44	3,479.40	250.01	10.90	112.88		
3 M	15	11.63	3,690.5	246.03	3,164.54	171.16	11.41	149.57		
3 N	20	16.23	7,816	390.80	3,723.54	352.13	17.61	150.65		
3 O	17	15	4,605	270.88	3,524.33	229.11	13.48	131.86		
3 P*	13.33	13.33	3,901	292.64	2,422.64	182.13	13.66	92.79		
3 Q	60	52.27	16,487.5	274.79	3,635.76	784.60	13.08	150.71		
3 R	18	15.90	7,290	405.00	4,589.22	351.71	19.51	198.48		
Means	18.14	15.40	6,649.47	366.52	3,887.09	299.65	16.52	160.90		

* Herd No. 3 P has only been under test for four months.

RIVER MURRAY HERD TESTING ASSOCIATION.

RESULTS OF BUTTERFAT TESTS FOR MARCH, 1924.

Herd No.	Average No. of Cows in Herd.	Average No. of Cows in Milk.	Milk.			Butterfat.		
			Per Herd during March.	Per Cow during March.	Per Cow October to March.	Per Herd during March.	Per Cow during March.	Per Cow October to March.
I/J	34-87	30	22,472-5	644-46	4,759-20	934-48	26-80	180-55
I/C	20	16	8,912-5	445-63	2,875-36	431-24	21-56	130-82
I/L	20	15-48	8,935-5	446-78	3,716-55	408-04	20-40	102-19
I/M	21-61	17-29	10,235	473-62	2,489-22	512-49	23-72	127-32
I/R	17-23	15-06	6,029	349-91	2,976-28	349-36	20-28	144-28
I/T	13	12-45	9,788	652-53	3,068-44	514-20	34-28	155-20
I/W	18	14-29	7,803	433-50	2,946-06	298-57	16-48	113-44
I/Y	19	16	10,416	548-21	3,618-20	509-58	26-82	168-49
I/Z	20-55	17-29	11,205	545-25	3,193-69	535-79	26-07	146-42
I/DD	26	21-52	11,966-5	460-25	3,368-27	528-93	20-27	147-00
I/EE	11-61	11-61	6,954	598-95	3,815-15	330-95	28-51	175-95
I/FF	12-87	9-39	5,147	399-92	3,813-88	245-91	19-11	161-79
I/Go	9	8-29	6,341	704-56	4,173-42	280-43	31-16	187-64
I/HH	13	11-36	7,623-5	586-42	4,151-04	343-59	26-43	182-11
I/Ii	13	10-65	7,773-5	597-96	3,630-72	312-87	24-07	155-95
I/JJ	16	12-06	8,285-5	517-84	3,219-38	364-60	22-79	138-39
I/KK	14	12	6,572	469-43	3,065-74	314-24	22-45	162-11
I/LL	16-74	13-45	7,672	458-30	3,323-28	341-51	20-40	147-03
I/MM	20	19	11,563	578-15	3,527-85	549-34	27-47	167-02
Means	17-81	14-90	9,247-07	519-07	3,479-92	426-43	23-94	153-29

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MOUNT GAMBIER AND DISTRICT HERD TESTING ASSOCIATION

RESULTS OF BUTTERFAT TESTS FOR APRIL, 1924.

Herd No.	Average No. of Cows in Herd.	Average No. of Cows in Milk.	Milk.				Butterfat.			
			Per Herd during April.	Per Cow during April.	Per Cow August to April.	Per Herd during April.	Per Cow during April.	Per Cow August to April.	Per Cow during April.	Per Cow August to April.
2/A	15	12.77	5,207	347.13	4,550.12	232.97	16.86	187.70		
2/B	9	7.03	3,727.5	414.17	6,735.22	158.80	17.64	246.53		
2/E	12	10.37	5,760	480.00	5,635.58	215.24	20.44	236.10		
2/H	24.43	19.70	8,803	360.33	5,338.60	305.46	16.19	222.27		
2/I	14	11.80	5,375	383.93	5,740.88	231.78	16.56	225.90		
2/J	12	11.93	6,005	500.42	7,155.17	287.37	23.96	292.93		
2/K	25	18	9,988	399.52	5,015.06	434.19	17.37	193.83		
2/L	22	17.77	9,517	432.59	3,931.55	470.55	21.66	177.56		
2/O	30	19.53	10,915	363.83	4,009.59	440.26	14.68	164.49		
2/R	16.20	15.07	11,588	715.31	8,581.81	474.01	29.29	338.58		
2/S	6	4.47	2,972	495.33	6,753.52	147.49	24.53	306.58		
2/T	12	11.13	6,691	557.58	6,736.92	270.79	22.57	256.28		
2/U	17	6.50	3,720	218.82	6,099.50	152.29	8.96	239.20		
2/V	21	15	5,145	245.00	3,729.16	220.05	10.48	151.87		
2/W	15.37	8.73	5,185	333.01	6,572.92	206.38	13.25	240.82		
2/Y	12	10.53	5,909	492.42	6,506.05	258.50	21.54	202.79		
2/Bb	9	8.83	3,225	358.33	4,663.94	142.76	15.86	180.70		
2/Cc	13	10.27	2,680	206.15	4,034.81	135.13	10.39	174.16		
Means	15.84	12.19	6,245.14	394.15	5,421.03	273.87	17.29	214.32		

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ADVISORY BOARD OF AGRICULTURE.

The monthly meeting of the Advisory Board of Agriculture was held on Tuesday, May 13th, there being present Mr. W. S. Kelly (Chairman), Captain S. A. White (Vice-Chairman), Colonel Rowell, Messrs. C. A. Loxton, B.V.Sc. (Chief Inspector of Stock), A. Julius (Conservator of Forests), A. M. Dawkins, L. Cowan, B.Sc. (Agric.), A. B. Feuerheerdt, F. Coleman, C. J. Tuckwell, J. W. Sandford, P. H. Jones, H. S. Taylor, and the Secretary (Mr. H. J. Finniss). Apologies were received from Professor Perkins and the Hon. W. Duncan, M.L.C.

Welcome to New Member.—The Chairman (Mr. W. S. Kelly), on behalf of the members of the Board, extended a cordial welcome to Mr. A. Julius (Conservator of Forests), who had recently been appointed a member of the Advisory Board.

Michaelmas Holidays and the Spring Show.—It was decided that the Chairman of the Board should interview the Minister of Education and endeavor to have the date of the Michaelmas holidays altered to synchronise with the September Show.

Washed Super Bags for Marketing Potatoes.—At the recent Conference of South-Eastern Branches it was decided "That it be permissible to use good, sound, thoroughly washed super bags for marketing potatoes." On the motion of Mr. F. Coleman, seconded by Colonel Rowell, it was decided to transmit the resolution to the chairman of the Central Board of Health for comment.

Supplies of Forest Trees.—The South-Eastern Conference resolved "That the Government be asked to supply trees in unlimited quantities at cost price or a nominal charge, instead of distributing them free." Mr. F. Coleman moved, and Captain S. A. White seconded, that the words "in unlimited quantities" be struck out. This was carried, and in its amended form the resolution met with the strong support of the Board, who decided to recommend the Government to take action in the direction suggested.

Voluntary Wheat Pool.—The motion "That this Conference favors the continuance of the guarantee to the Voluntary Wheat Pool," was carried at the recent Conference of South-Eastern Branches, was received.

Lectures to Bureaux on Bee-keeping.—A communication was received intimating that the writer thereof was prepared to deliver lectures on bee-keeping to Branches of the Agricultural Bureau interested in the bee industry. On the motion of Mr. Taylor, seconded by Mr. F. Coleman, the Secretary was instructed to ascertain whether certain Branches of the Bureau were desirous of securing instruction on this industry, and if so, to take the necessary steps to have their wishes fulfilled.

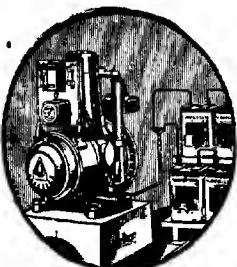
Appointment of Field Officer.—Mr. P. H. Jones moved, and Mr. F. Coleman seconded, "That the Minister of Agriculture be recommended to appoint a general field officer to the staff of the Department of Agriculture." The motion was carried.

Congress, 1924.—The Chairman of the Advisory Board (Mr. W. S. Kelly), the Director of Agriculture (Professor Arthur J. Perkins), the Principal of the Roseworthy Agricultural College (Mr. W. J. Colebatch), Mr. H. S. Taylor, and the Secretary (Mr. H. J. Finnis) were appointed a committee to deal with arrangements for the 1924 Annual Congress.

Life Membership.—The name of Mr. J. K. Bond, of the Tatiara Branch, was added to the roll of life members of the Agriculture Bureau.

New Branches.—Approval was given for the formation of Branches of the Agricultural Bureau at Gulgare and Karoonda, with the following gentlemen as foundation members:—*Gulgare*—B. W., A. G., and W. E. Thomas, D. A. and J. T. McLean, T. A. and E. E. Sandow, E. M. Davidson, E. Smart, L. H. and J. G. Teakle, H. G. Spackman, D. M. Hodge, A. C. Martin, A. J. Godlee, W. G. Allen, R. S. Booth, and C. N. Jones. *Karoonda*—E. H. Ridgley, G. H. Hicks, — Hawkes, I. Mickan, A. Thomson, E. Hoff, W. Hoff, A. Stevens, J. J. English, E. R. Miell, C. L. Venn, J. Cornford, H. Hart, L. J. Saudercock, A. Walker, O. S. Burgan, and D. and F. Laurie.

New Members.—The following names were added to the rolls of existing Branches:—*Murray Bridge*—A. Patterson, C. J. Pearce, Aldinga—T. L. Battye, W. J. Pethick, L. J. Humphrys, B. Eatts, L. H. Lovelock, W. E. Schultz, Darke's Peak—G. Cronin, Mypononga—F. Scott, H. Prosser, E. Prosser, Kilkerran—E. Heinrich, Currency Creek—J. S. Green, Lyndoch—F. Hunt, Cygnet River—T. H. Waller, New Residence—R. Klitscher, M. Klitscher, G. Klitscher, E. Glatz, Tweedvale—J. S. Jantke, H. B. Leuders, O. A. Boerth, J. Boerth, A. O. Nagel, B. O. Reu, Brinkley—J. G. Such, North Boorowowie—K. Hanlin, Parilla—A. Earsman, C. Dabinett, Mortchard—S. Mills, Kongorong—C. H. Johns, Willowie—J. K. Linklater, C. Stone, K. Stone, I. R. Starkey, W. G. Evans, N. H. Ridley, Tantanoola—I. L. McDourt, Kringin—J. C. Werner, A. Herbert, Maltee—E. Richie, Brentwood—E. J. Treasure, H. Webb.



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**IMPORTS AND EXPORTS OF FRESH FRUITS, PLANTS, ETC.
DURING THE MONTH OF APRIL, 1924.**

IMPORTS.

Interstate.

Apples (bushels)	79
Bananas (bushels)	9,843
Grapes (bushels)	2
Passion fruit (bushels)	141
Pineapples (bushels)	191
Cabbages (packages)	5
Cauliflowers (packages)	5
Mixed vegetables (packages)	1
Onions (bags)	547
Potatoes (bags)	18,521
Bulbs (packages)	59
Plants (packages)	51
Seeds (packages)	60
Trees (packages)	1
Wine casks, empty (number)	3,078
Pears (bushels)	4

Fumigated—42 wine casks and 1 package of fruit trees.

Rejected—18 bush. of bananas, 8 bush. of pineapples, 1 bush. of apples, 2 bush. of grapes, and 2 bags of potatoes.

Overseas.

3,228 packages of seeds, &c.

EXPORTS (Overseas).

33 packages of citrus fruit, 113,402 packages of other fresh fruit, 424,712 packages of dried fruit were exported to overseas markets. These were consigned as follows:—

London.

Apples (packages)	110,679
Pears (packages)	1,691
Quinces (packages)	6
Dried fruit (packages)	422,262

New Zealand.

Dried fruit (packages)	1,469
Citrus fruit (packages)	33

South Africa.

Dried fruit (packages)	895
----------------------------------	-----

Port Said.

Apples (packages)	302
-----------------------------	-----

India and East.

Apples (packages)	654
Dried fruit (packages)	86
Grapes (packages)	70

THE AGRICULTURAL OUTLOOK.

REPORTS FOR THE MONTH OF MAY.

The following reports on the general agricultural condition and outlook of the areas represented by the Government Experimental Farms mentioned below have been prepared by the respective Managers:—

Buabowrie.—Weather.—The weather for May has been ideal in this locality from the point of view of farming and feed growing, 159 points of rain having been registered, which fell during 10 days in small quantities. Crops.—There is very little to be seen up to the time of writing in the way of cereal crops. The lucerne is at a standstill, which is only natural for this time of the year. Natural feed.—There is an abundance of natural feed just now. Stock.—Livestock are all in good condition. Pests.—There are no pests worth mentioning. Miscellaneous.—Farmers are busy with their seeding.

Egyptbolite.—The weather has been comparatively calm, with a preponderance of cold, frosty nights and fine, warm days, interspersed with light rains. One hundred and fifty-four points of rain have been registered, which is 1 in. below the average for May. The total of 7½ in. for the year is over an inch above the average for the first five months of the year. Crops.—Winter cereals have had a splendid opening for their season, and practically all hay, wheat, and oat crops have been sown, and under good soil conditions. Crops have germinated well and made really good initial growth. Large areas of subterranean clover have been sown, and these have also germinated well. The frosts have helped materially to ripen off the maize grown for grain under irrigation, and some varieties are now ready for harvesting. Natural feed.—Growth of feed was considerably checked by the some what dry frosty weather received earlier in the month; but the rains received later have caused an improved growth.

Turretfield.—Weather.—The earlier portion of the month was dry. Rain started on May 15th, and continued for about a week. This was followed by fine days with frosty mornings; 187 points of rain were registered. Crops.—A considerable area has been sown; that sown dry before the rain is up and giving a nice green color to the fields. Natural feed.—There is little natural feed; the frosts have checked the growth. Stock are in only fair condition; several nice lots of early lambs are to be seen. Pests.—Foxes and eagle hawks have done some damage to the lambs. Miscellaneous.—A larger area should be sown this year in the district.

DAIRY AND FARM PRODUCE MARKETS.

A. & W. Sandford & Co., Limited, reported on June 2nd, 1924:—

BUTTER.—During the month under review several fluctuations in values with all grades of butter have taken place in sympathy with the markets of the Eastern States, especially Victoria, from which State heavy importations of choicest qualities are being made so as to supply the trade's requirements. There has been a fair surplus of first, second, and third grade bulk butters which have been difficult to dispose of, although fairly good demand has been ruling on the local market for these grades. Choicest factory and creamery fresh bulk butter, 1s. 5½d.; first grade bulk, 1s. 3½d.; second and third grade, 1s. 0½d. to 1s. 1d.; best separator, and dairies, 1s. 4d. to 1s. 5½d.; fair quality, 1s. 2½d. to 1s. 3½d.; store and collectors, 1s. 0½d. to 1s. 2½d.

Eggs.—Values throughout have been stationary, only an advance of 1d. per dozen taking place since the beginning of last month. At each sale, fairly substantial quantities were marketed and readily absorbed by interstate purchasers, especially New South Wales. Fresh hen, 2s.; duck, 2s. 1d. per dozen.

CHEESE.—The usual shrinkage in supplies has taken place with consignments of new makes from the South-Eastern factories, with the result that values improved. Buyers have been purchasing keenly for newly made cheese, the matured lines, of which heavy stocks are held, being neglected. At the last market in the month values receded ½d. per lb., due to the lower interstate quotations. New makes, 10d. to 11½d. per lb. for large loaf; semi-matured and matured, large size, selling from 11d. to 11½d. per lb.

HONEY.—Apart from the fair local trade, big shipments have been made to the interstate purchasers which have kept consignments cleared, and as forwardings of the choicest liquid qualities were not equal to the demand, more attention has been paid to the lower grades, with the result that they have been moving more freely. Values are as follows:—Prime clear extracted in liquid condition, 5½d. to 5¾d.; best quality candied lots, 3d.; lower grades, 2½d. to 3d.; beeswax readily saleable at 1s. 4d. to 1s. 4½d. per lb.

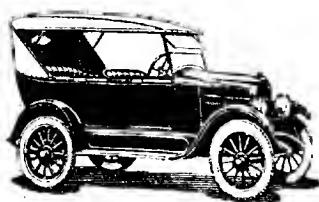
ALMONDS.—For some time past there has been a lack of interstate inquiries, and, as only moderate sales have been effected with local dealers, values have eased, rates being as follows:—Brandis, 7½d. to 8d.; mixed softshells, 6½d. to 7d.; hardshells, 3½d. to 4d.; kernels, short of demand at 1s. 7½d. to 1s. 8d.

BACON.—Good turnover has been experienced with this line, local supplies being hardly equal to this State's requirements, and several shipments from Victoria and New South Wales have been handled on this market. To-day prices recorded a lowering, values being as follows:—Best factory cured sides, 1s. 3d. to 1s. 3½d.; middles, 1s. 7d. to 1s. 7½d.; rolls, 1s. 3d. to 1s. 3½d.; Hutton's "Pineapple" brand hams, 1s. 8d. to 1s. 9d.; Hutton's "Pineapple" brand middles, 1s. 7½d.; lard, Hutton's "Pineapple" brand lard in packets, 1s.; in bulk, 11d. per lb.

LIVE POULTRY.—Fairly extensive catalogues have been submitted during the period, but supplies have not been equal to the demand, and this brought about an advance in values. The majority of the consignments were composed of fairly well-conditioned birds, and most satisfactory prices have been secured for these, but where light sorts were offered prices according to size and quality were realised. Good quality turkeys continue to be scarce. We advise forwarding consignments. Crates obtainable on application. The following rates ruled at our last auction:—Prime roasters, 5s. to 6s. 6d. each; nice conditioned cockerels, 3s. 3d. to 4s. 9d.; poor conditioned cockerels, 2s. 6d. to 3s.; plump hens, 3s. 6d. to 5s.; medium hens, 2s. 9d. to 3s. 3d.; some pens of weedy sorts lower; geese, 6s. 3d. to 7s.; ducks, good condition, 4s. 9d. to 6s.; ducks, fair condition, 3s. 6d. to 4s. 6d.; turkeys, good to prime condition, 4s. 0½d. to 1s. 4d. per lb. live weight; turkeys, fair condition, 10½d. to 11½d.; turkeys, fattening sorts, lower; pigeons, 8d. each.

POTATOES.—Prime new local and Victorian potatoes at 6s. 6d. to 8s. 6d. per cwt. on rail, Mile End.

ONIONS.—Best brown onions at 12s. 6d. to 13s. 6d. per cwt. on rail.



ALL HUPMOBILE units are built in the HUPMOBILE works or under direct HUPMOBILE supervision. Satisfied workmen with years of experience supervise the making of even the minutest part. It is this conscientious care of HUPMOBILE workmen that helped establish the incomparable reputation of the HUPMOBILE.

HUPMOBILE

ALL PARTICULARS FROM
Phoenix Motor Co., Ltd.,
112-120, Pirie Street, Adelaide.

RAINFALL TABLE.

The following figures, from data supplied by the Commonwealth Meteorological Department, show the rainfall at the subjoined stations for the month of and to the end of May, 1924, also the average precipitation to the end of May, and the average annual rainfall.

Station.	For May, 1924.	To end May, 1924.	Avg'e. To end May.	Avg'e. Annual Rainfall	Station.	For May, 1924.	To end May, 1924.	Avg'e. To end May.	Avg'e. Annual Rainfall
FAR NORTH AND UPPER NORTH.									
Oodnadatta .....	...	1-43	2-46	4-94	Spalding	1-37	6-82	5-59	20-2
Marree .....	...	1-26	2-48	6-07	Gulgare	1-79	8-29	5-41	19-8
Farina .....	...	1-22	2-85	6-66	Yacka	1-47	7-32	4-71	15-8
Copley .....	...	1-26	3-59	8-39	Koolunga	1-33	6-24	4-92	15-9
Beltana	0-02	0-73	3-75	8-97	Snowtown	1-67	6-11	5-65	18-1
Blinman	0-10	1-33	4-89	12-53	Brinkworth	1-16	6-06	4-73	18-3
Tarcocoo	0-07	2-14	2-95	7-74	Blyth	1-38	7-63	5-55	17-0
Hookima	0-58	1-44	4-47	13-46	Clare	2-36	10-06	6-63	24-6
Hawker	0-36	1-46	4-25	12-92	Mintaro	2-31	7-87	6-69	23-5
Wilson	0-24	1-89	4-20	12-53	Watervale	2-40	9-59	8-37	27-6
Gordon	0-22	2-13	4-01	11-55	Auburn	2-23	6-96	7-72	24-3
Quorn	0-36	2-45	4-61	14-21	Hoyleton	1-36	5-98	5-68	17-9
Port Augusta	0-15	3-40	3-77	9-67	Balaklava	1-91	5-50	5-54	15-6
Port Augusta West	0-13	3-04	3-55	9-71	Port Wakefield	1-01	5-80	5-04	13-2
Bruce	0-15	2-33	3-58	10-77	Terowie	0-98	3-58	4-45	13-8
Hammond	0-29	2-92	4-20	11-91	Yarcowie	0-87	3-55	4-70	14-2
Wilmington	0-65	4-99	5-95	18-29	Hallett	1-97	6-42	4-86	16-4
Willowie	0-48	3-51	4-10	12-57	Mount Bryan	1-57	7-17	4-76	16-8
Melrose	1-39	6-67	7-58	23-40	Kooringa	1-82	6-42	5-60	18-0
Booleroo Centre	1-41	4-90	5-00	15-65	Farrell's Flat	1-49	6-44	5-80	19-0
Port Germein	1-23	5-09	4-69	12-89	WEST OF MURRAY RANGE.				
Wirrabara	1-43	6-06	5-68	19-78	Manoora	1-68	6-29	5-68	18-9
Appilla	0-92	6-73	4-78	15-00	Saddleworth	1-96	6-04	6-45	19-7
Cradock	0-22	1-48	2-92	11-52	Marrabel	2-09	6-38	6-09	19-7
Carrieton	0-39	2-91	4-21	12-90	Riverton	2-53	6-93	6-08	20-7
Johnburg	0-21	2-40	3-66	10-91	Tarlee	2-63	6-83	5-87	17-9
Eurelia	0-24	2-33	4-49	13-54	Stockport	2-11	6-49	5-28	16-6
Orroroo	0-64	2-59	4-75	13-73	Hamley Bridge	1-95	7-55	5-41	16-9
Nackara	0-30	1-80	4-48	11-99	Kapunda	2-63	7-04	6-48	19-8
Black Rock	0-65	2-87	4-44	12-75	Freeing	1-90	5-88	5-71	17-9
Uclota	0-18	1-89	4-15	12-04	Greenock	2-65	7-10	6-62	21-8
Peterborongh	0-64	3-56	4-63	13-53	Truro	2-75	7-13	6-19	20-2
Yongala	1-04	4-54	4-62	14-58	Stockwell	2-93	7-33	6-25	20-2
LOWER NORTH-EAST.									
Yunta	0-13	1-12	3-55	8-88	Nuriootpa	1-93	5-82	6-35	21-0
Waukaringa	0-21	1-82	3-25	8-54	Angaston	2-71	7-04	6-82	22-5
Mannahill	0-27	1-11	3-44	8-67	Tanunda	2-27	6-61	6-95	22-2
Cockburn	0-07	1-82	3-30	8-31	Lyndoch	2-86	7-76	6-64	22-9
Broken Hill, N.S.W.	0-08	1-43	3-87	9-98	Williamstown	2-95	7-24	7-88	27-4
ADELAIDE PLAINS.									
Port Pirie	1-01	5-43	4-84	13-53	Mallala	2-60	7-51	5-52	16-7
Port Broughton	1-05	5-45	4-79	14-29	Roseworthy	2-15	6-55	5-54	17-3
Bute	1-62	5-93	4-98	15-78	Gawler	2-17	7-67	6-37	19-11
Laura	1-87	5-50	5-03	18-26	Two Wells	2-21	7-31	5-36	18-8
Caltowie	1-28	5-66	5-44	17-20	Virginia	2-29	6-69	5-65	17-3
Janetstown	1-55	6-76	5-35	17-89	Smithfield	2-51	7-51	5-47	17-2
Bundaleer W. Wks.	1-43	8-00	5-19	18-09	Salisbury	2-23	7-38	6-19	18-51
Gladstone	1-49	7-56	5-10	16-29	North Adelaide	3-12	11-53	7-02	22-3
Crystal Brook	1-58	7-58	5-13	15-95	Adelaide	2-43	9-29	6-94	21-0
Georgetown	1-63	7-60	5-92	18-55	Glenelg	1-86	7-15	5-97	18-45
Narridy	1-34	5-20	5-33	16-37	Brighton	1-92	7-49	6-64	21-37
Redhill	1-60	5-43	5-43	16-94	Mitcham	3-24	9-74	7-40	24-26
					Glen Osmond	3-39	9-52	7-99	25-04
					Magill	3-92	12-18	7-16	25-35

RAINFALL. *continued.*

station.	For May, 1924.	To end May, 1924.	Avg'te To end May.	Avg'te Annual Rainfall	station.	For May, 1924.	To end May, 1924.	Avg'te To end May.	Avg'te Annual Rainfall
MOUNT LOFTY RANGES.									
Teatree Gully.....	4.48	12.03	8.69	27.77	Talia.....	1.73	3.67	3.86	15.32
Stirling West.....	4.66	16.82	11.92	46.82	Port Elliotson.....	2.89	5.44	4.49	16.56
Craida.....	5.84	16.03	13.07	44.23	Connimba.....	2.13	3.71	4.12	18.56
Clarendon.....	3.38	10.71	10.33	33.09	Port Lincoln.....	2.07	4.76	5.78	19.66
Morphett Vale.....	3.10	10.17	7.38	22.90	Tumby.....	1.88	2.93	4.06	14.56
Nearlunga.....	3.10	10.28	6.51	20.41	Carrow.....	1.45	2.58	4.19	14.42
Willunga.....	4.26	11.16	8.20	25.99	Arno Bay.....	1.16	2.93	4.11	13.06
Aldinga.....	3.66	8.86	6.42	20.44	Cowell.....	0.32	2.69	4.40	11.63
Myponga.....	3.14	10.69	8.49	29.80	Minnipa.....	0.97	3.45	1.89	15.51
Normanville.....	3.77	9.40	6.57	30.70	WEST OF SPENCER'S GULF. <i>continued.</i>				
Vankalilla.....	3.30	9.33	7.44	23.31	Talia.....	1.73	3.67	3.86	15.32
Mount Pleasant	3.50	7.60	7.89	27.28	Port Elliotson.....	2.89	5.44	4.49	16.56
Birdwood.....	3.58	7.99	8.30	29.39	Connimba.....	2.13	3.71	4.12	18.56
Gumeracha.....	4.79	11.78	9.78	33.36	Port Lincoln.....	2.07	4.76	5.78	19.66
Millbrook Reservoir	5.20	13.18	10.33	36.21	Tumby.....	1.88	2.93	4.06	14.56
Tweedvale.....	5.49	12.48	9.80	35.65	Carrow.....	1.45	2.58	4.19	14.42
Woodside.....	4.74	11.00	8.92	32.20	Arno Bay.....	1.16	2.93	4.11	13.06
Ambleside.....	4.42	11.94	9.74	34.82	Cowell.....	0.32	2.69	4.40	11.63
Sairme.....	4.05	10.11	8.50	28.44	Minnipa.....	0.97	3.45	1.89	15.51
Mount Barker.....	3.41	10.00	9.38	31.30	YORKE PENINSULA.				
Echunga.....	4.42	11.40	10.11	33.06	Talia.....	1.73	3.67	3.86	15.32
Macclesfield	3.78	9.67	8.92	30.65	Port Elliotson.....	2.89	5.44	4.49	16.56
Meadows.....	4.96	14.60	10.72	36.19	Connimba.....	2.13	3.71	4.12	18.56
Strathalbyn.....	2.25	7.80	6.24	19.37	Port Lincoln.....	2.07	4.76	5.78	19.66
MURRAY FLATS AND VALLEY.									
Meningie.....	2.23	8.91	6.18	18.74	Tumby.....	1.88	2.93	4.06	14.56
Milang.....	1.39	6.07	5.13	15.45	Carrow.....	1.45	2.58	4.19	14.42
Langhorne's Creek	1.86	6.64	4.77	14.77	Arno Bay.....	1.16	2.93	4.11	13.06
Wellington.....	2.35	6.94	4.81	14.80	Cowell.....	0.32	2.69	4.40	11.63
Taihen Bend.....	2.28	7.24	4.99	14.68	Minnipa.....	0.97	3.45	1.89	15.51
Murray Bridge.....	1.94	5.35	4.81	13.94	SOUTH AND SOUTH-EAST.				
Callington.....	1.73	5.72	5.04	15.49	Talia.....	1.73	3.67	3.86	15.32
Mannum.....	1.19	4.60	4.24	11.66	Port Elliotson.....	2.89	5.44	4.49	16.56
Palmer.....	1.57	3.82	4.65	15.46	Connimba.....	2.13	3.71	4.12	18.56
Sedan.....	1.65	3.82	4.10	12.27	Port Lincoln.....	2.07	4.76	5.78	19.66
Swan Reach.....	1.36	3.94	3.75	11.06	Tumby.....	1.88	2.93	4.06	14.56
Blanchetown.....	0.79	3.23	3.81	10.09	Carrow.....	1.45	2.58	4.19	14.42
Eudunda.....	1.21	4.15	5.44	17.51	Arno Bay.....	1.16	2.93	4.11	13.06
Sutherlands.....	0.73	3.22	3.43	11.20	Cowell.....	0.32	2.69	4.40	11.63
Morgan.....	0.47	3.17	3.23	9.30	Minnipa.....	0.97	3.45	1.89	15.51
Walkerin.....	0.54	3.90	3.54	9.87	EDITHBURGH.				
Overland Corner	0.30	2.80	4.03	11.03	Talia.....	1.73	3.67	3.86	15.32
Loxton.....	0.58	3.79	4.50	12.50	Port Elliotson.....	2.89	5.44	4.49	16.56
Renmark.....	0.49	3.04	3.87	11.06	Connimba.....	2.13	3.71	4.12	18.56
Monash.....	0.49	3.43	—	—	Port Lincoln.....	2.07	4.76	5.78	19.66
WEST OF SPENCER'S GULF.									
Eucla.....	0.45	1.63	4.37	10.01	Tumby.....	1.88	2.93	4.06	14.56
White Well.....	—	2.73	3.20	9.20	Carrow.....	1.45	2.58	4.19	14.42
Fowler's Bay.....	1.18	3.12	4.04	12.14	Arno Bay.....	1.16	2.93	4.11	13.06
Penong.....	1.47	4.98	4.27	12.53	Cowell.....	0.32	2.69	4.40	11.63
Ceduna.....	0.79	2.83	2.29	10.25	Minnipa.....	0.97	3.45	1.89	15.51
Smoky Bay.....	1.03	2.64	3.49	10.98	EDITHBURGH.				
Petina.....	1.21	3.12	3.87	12.95	Talia.....	1.73	3.67	3.86	15.32
Streaky Bay.....	2.17	3.98	4.51	18.07	Port Elliotson.....	2.89	5.44	4.49	16.56
					Connimba.....	2.13	3.71	4.12	18.56
					Port Lincoln.....	2.07	4.76	5.78	19.66
					Tumby.....	1.88	2.93	4.06	14.56
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					Arno Bay.....	1.16	2.93	4.11	13.06
					Cowell.....	0.32	2.69	4.40	11.63
					Minnipa.....	0.97	3.45	1.89	15.51
					EDITHBURGH.				
					Talia.....	1.73	3.67	3.86	15.32
					Port Elliotson.....	2.89	5.44	4.49	16.56
					Connimba.....	2.13	3.71	4.12	18.56
					Port Lincoln.....	2.07	4.76	5.78	19.66
					Tumby.....	1.88	2.93	4.06	14.56
					Carrow.....	1.45	2.58	4.19	14.42
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					Connimba.....	2.13	3.71	4.12	18.56
					Port Lincoln.....	2			

AGRICULTURAL BUREAU REPORTS.

INDEX TO CURRENT ISSUE AND DATES OF MEETINGS.

Branch.	Report on Page	Dates of Meetings		Branch.	Report on Page	Dates of Meetings	
		June.	July.			June.	July.
Alawoona		—	—	Geranium	1103	28	26
Aldinga	1116	18	16	Gladstone	†	13	11
Allandale East	1117	20	18	Glencoe	*	19	17
Amyton	*	16	14	Glossop	1096	18	16
Angaston	*	—	—	Goode	*	18	16
Appila-Yarrowie	*	—	—	Green Patch	1086	16	14
Arthurton	†	—	—	Gulnare	†	—	—
Ashbourne	*	—	—	Gumeracha	*	16	14
Balaklava	*	14	12	Haldon	*	—	—
Balhannah	*	6	4, 25	Hartley	†	11	—
Barmera	1102	16	14	Hawker	†	17	15
Beetaloo Valley	*	—	—	Hilltown	*	—	—
Belalie North	*	14	12	Hookins	†	12	10
Berri	1102	18	16	Inman Valley	*	—	—
Bethel	1078	—	—	Ironbank	*	14	12
Big Swamp	†	—	—	Kadina	*	—	—
Blackheath	1103, 1116	20	18	Kalangadoo (Women's)	†	14	12
Black Springs	1078	17	15	Kalangadoo	1120	14	12
Blackwood	1116	16	21	Kangarilla	1004	—	—
Block E	*	—	—	Kannmantoo	*	14	12
Blyth	*	7	5	Keith	*	—	—
Booleroo Centre	*	14	12	Ki Ki	*	—	—
Borrika	*	—	—	Kilkerran	1084	17	15
Brentwood	1082	12	10	Kimba	*	—	—
Brinkley	1094	14	12	Kingston-on-Murray	*	—	—
Brinkworth	1077	—	—	Kongorong	†	12	10
Bundaleer Springs	*	—	—	Koonibba	*	13	11
Bute	*	17	15	Koppio	†	16	14
Butler	†	—	—	Kringin	*	—	—
Calca	*	—	—	Kybybolite	*	12	10
Cadell	*	—	—	Lake Wangary	*	14	12
Canowie Belt	*	—	—	Lameroo	1103	20	18
Carrow	*	11	16	Laura	†	14	19
Cherry Gardens	1116	17	—	Lenswood and Forest Range	—	—	—
Clanfield	*	—	—	Light's Pass	1082	—	—
Clare	*	—	—	Lipson	1086	—	—
Clarendon	†	16	14	Lone Gum and Monash	†	11	16
Claypan Bore	*	13	16	Lone Pine	1080	—	—
Cleve	*	11	16	Longwood	1104	—	—
Collie	*	21	—	Loxton	*	—	—
Colton	*	27	25	Lucindale	*	—	—
Coomandook	1102	11	16	Lyndoch	1079, 1082	12	10
Coonalpyn	1103	20	18	McLachlan	†	—	—
Cradock	*	—	—	McLaren Flat	1104	—	—
Crystal Brook	*	14	12	MacGillivray	†	17	15
Cunguna	*	—	—	Maitland	*	12	10
Currency Creek	1116	20	18	Mallala	*	16	21
Cygnet River	1104	12	10	Maltee	1087, 1084	13	11
Darke's Peak	1085	—	—	Mangalo	*	—	—
Denial Bay	*	—	—	Mannanarie	1074-5	12	10
Edilillie	†	28	26	Marama	1098	—	—
Elbow Hill	*	17	22	Meadows	*	11	16
Eurilia	1074	14	12	Meningie	*	—	—
Farrell's Flat	1079	13	11	Milang	1107	14	12
Frances	†	38	26	Millicent	*	7	12
Gawler River	*	16	14	Miltalie	1088	14	12
Georgetown	*	14	12				

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		June.	July.			June.	July.
Mindarie	*	2	7	Roberts and Verran	1090-92	12	10
Mindatow	*	13	11	Rockwood	1110	16	14
Minnipa	*	11	16	Rosedale	1089	18	16
Monarto South	1093	—	—	Rosy Pine	*	—	—
Moonta	1085	13	11	Rudall	*	12	10
Moorak	*	—	10	Saddleworth	*	—	—
Moorlands	*	—	—	Saddleworth (Women's)	*	10	8
Moorook	*	16	14	Salisbury	1082	3	1
Morchard	1074	14	12	Salt Creek	*	—	—
Morphett Vale	*	19	17	Sandalwood	*	—	—
Mount Barker	*	11	16	Shoal Bay	1112-3	17	—
Mount Bryan	*	—	—	Smoky Bay	*	14	—
Mount Bryan East	*	—	—	Spalding	*	—	—
Mount Compass	*	—	—	Stockport	*	20	18
Mount Gambier	1118	14	12	Streaky Bay	1094	—	—
Mount Hope	1089	14	12	Strathalbyn	1116	17	16
Mount Pleasant	1109	—	—	Talia	1094	14	12
Mount Remarkable	*	—	—	Tantanoola	1120	14	12
Mount Schank	*	17	15	Taplan	*	17	16
Mundalla	*	11	—	Tarcowie	*	17	16
Murray Bridge	1103	17	22	Tarlee	1081	17	14
Mypolonga	1103	11	16	Tatiara	*	21	19
Myrdle	*	—	—	Tweedvale	1113-5	19	17
Nantawarra	1082	12	10	Two Wells	1081	—	—
Naracoorte	*	14	12	Uralla & Summertown	*	2	7
Naridy	*	21	19	Veitch	*	—	—
Narrung	*	21	19	Virginia	*	—	—
Neeta	*	—	—	Waikerie	*	—	—
Nelshby	*	14	12	Wall	*	—	—
Netherton	1103	14	11	Wanbi	*	—	—
New Residence	1100	—	—	Warcoorie	1074	17	16
North Boorborowie	1075-6	17	15	Watervale	*	—	—
North Bundaleer	*	—	—	Weavers	*	16	14
Northfield	*	—	—	Wepowie	*	17	15
Nunkieri and Yurgo	*	1	6	Whyte-Yarcowie	*	—	—
O'Loughlin	*	11	16	Wilkawatt	*	14	12
Orroroo	A.M.	—	19	Williamstown	1082	4	2
Owen	1082	13	11	(Women's)	—	—	—
Parilla	1100	13	—	Williamstown	1082	13	11
Parilla Well	*	16	14	Willowie	1074	11	16
Parnkie	*	—	—	Wilmington	*	11	16
Paruna	*	—	—	Windsor	*	—	—
Paskeville	1084	13	11	Winkie	*	—	—
Pata	*	—	—	Wirrabara	*	—	—
Penola	*	7	5	Wirrega	*	—	—
Petina	1094	28	26	Wirilla	*	14	12
Pinnaroo	*	15	19	Wirrulla	*	14	12
Pompoota	*	11	9	Wolowa	*	—	—
Poochera	*	7	5	Wookata	*	—	—
Port Broughton	*	13	11	Wudinna	*	—	—
Port Elliot	1116	18	16	Wynarka	1102	—	—
Port Germien	*	21	19	Yacka	*	17	15
Fyery	1089	14	12	Yadnairic	*	17	15
Ramco	1102-3	16	14	Yallundi Flat	*	—	—
Rapid Bay	1109	7	5	Yaninee	*	—	—
Redhill	1076	—	—	Yeelanna	1093	14	12
Rendisham	*	11	16	Yongala Vale	*	—	—
Renmark	*	12	10	Yorketown	*	—	—
Riverton	*	—	—	Younghusband	*	19	17
Riverton (Women's)	*	—	—				

* No report received during the month of May.

† Held over until next month.

A.M. Annual Meeting.

THE AGRICULTURAL BUREAU OF SOUTH AUSTRALIA.

Every producer should be a member of the Agricultural Bureau. A postcard to the Department of Agriculture will bring information as to the name and address of the secretary of the nearest Branch.

If the nearest Branch is too far from the reader's home, the opportunity occurs to form a new one. Write to the department for fuller particulars concerning the work of this institution.

REPORTS OF BUREAU MEETINGS.

UPPER-NORTH DISTRICT.

(PETERBOROUGH AND NORTHWARD.)

WARCOWIE (Average annual rainfall, 12.16in.).

April 16th.—Present: 11 members.

FARMING IN THE NORTH.—Mr. W. Crossman, who read a paper dealing with this subject, said the farm should be divided into several paddocks and each rested occasionally, because continuous cropping was not a successful practice. It was advisable to adopt a system of rotation, i.e., a crop of barley or oats could be sown where wheat was grown the previous year. For such a purpose peas were an excellent crop, but owing to the lightness of the rainfall in the northern areas peas were not sown to any extent. He thought a number of varieties of wheat should be sown, because where one variety failed to yield a good return, another sort would perhaps produce a profitable crop. A good discussion followed.

EURELIA, April 12th.—The Hon. Secretary (Mr. E. P. Ware) read a paper from the *Journal of Agriculture*, "Care of Farm Stock." In the discussion that followed, reference was made to the number of lambs killed by foxes. It was generally agreed that poisoned baits was the best method of destroying the pests.

MORCHARD, April 12th.—Extracts from the *Journal of Agriculture* were read by Messrs. F. Scriven and N. Lillecrapp. Mr. F. Scriven also gave the results of experiments that he had carried out in connection with the application of different quantities of superphosphates to the soil.

WILLOWIE, April 2nd.—Mr. D. R. McCallum read a short paper, "Care of Horses," and an interesting discussion followed.

MIDDLE-NORTH DISTRICT.

(PETERBOROUGH TO FARRELL'S FLAT.)

MANNANARIE.

March 20th.—Present: 24 members and nine visitors.

Mr. H. E. Robinson read a paper "The Combine v. Drill and Cultivator." In the discussion that ensued, many of the members expressed opinions in favor of the combine, whilst others thought the implement left much to be desired as a weed destroyer.

QUESTION BOX.—Mr. A. Symons asked "Which is the better method of pickling wheat—in bags by dipping, or loose on the floor and mixing with a shovel?" Members favored dipping the bag. Mr. H. Crawford asked "The best time to cut Scotch thistles?" Some members considered it was a waste of time to cut thistles, particularly on grass land, others thought the best time to cut the weeds on fallow

was when the thistles had run up to flower, especially in wet years. Mr. A. T. Symons asked "Is 14in. working sufficiently deep to our Bathurst buri?" Members thought the depth quite sufficient to kill the weed.

MANNANARIE.

April 17th.—Present: 17 members and six visitors.

CARE OF FARM IMPLEMENTS AND MACHINERY.—In the course of a paper dealing with this subject, Mr. A. Symons said the first point was to see that a good iron shed was provided for all farm implements where wood was used in the construction, failing that, a brush shed could be erected, but it would always be dangerous on account of fire, and would also be a harbor for sparrows. A coat of boiled linseed oil should be applied to wood work, particularly the wheels, and an occasional coat of paint on the metal work (especially the heads of nuts to prevent rust) would be beneficial. Before commencing work in the field all implements should be in good order. The first thing to look to with the drill or combine was the super box, all the parts should be thoroughly cleaned and given a coat of paint. A dirty super box meant an uneven feed. All worn out parts should be replaced with new ones. During the nights of the working period, the drill box should be covered, because the dew made the super "cake," and there was a likelihood of bursting the cogs when starting. The plough and cultivator were two implements that required very little attention, the wheels and feet being the only main points to watch. Harrows should have good, sharp tynes to work satisfactorily. The binder and harvester were the implements which required the most attention of all farm implements. The binder should have grease removed from bearings and rust from the retainer and knoter, because if that were not done, the machine would not tie properly. Besides those few points a thorough overhauling or refitting of parts before starting was advisable. When hay cutting was finished all canvasses should be rolled up and put away from mice. In caring for the harvester it was necessary to see that the comb was not too open or a considerable amount of grain would be left on the straw. The proper adjustment of the winnowing was also an essential part to be considered, because it was difficult to make a good, clean sample and not lose wheat. The greatest care should also be exercised in lubrication otherwise the parts would wear out rapidly. When harvesting was finished the elevators should be cleaned and the belts oiled. A prop under the offside of the comb would prevent the machine sagging. The most important part of the harness was the collar. It should never be allowed to lose its shape before being relined. If two or three old collars could be kept on hand they would be very useful for horses with sore shoulders, because they could be cut to ease any part of the shoulder. Reins, winkers, and couplings also needed more attention than they received in some cases. The number of accidents would be considerably reduced if that were given. Reins and couplings required a coat of neat's foot oil at least twice a year, otherwise they became hard with being exposed to the weather. Wagon and cart saddles should be relined before they were worn out of shape. When leading harness had to be used, as in a tandem team, it was a good plan to cover it each night with an old bag. Riding saddles and bridles should never be oiled, but given a coat of harness dressing.

NORTH BOOBOROWIE (Average annual rainfall, 16.35in.).

March 18th.—Present: 11 members and four visitors.

PROFIT FROM LUCERNE GROWING.—Mr. H. Dawson contributed a short paper on this subject. He thought sheep would bring in a fair amount of profit in that district. If a mob of about 300 ewes were bought after shearing time at £1 per head, and were sold after the next shearing he considered they would realise about £1,000. In the summer time they could be put in the stable or a dry grass paddock. The lucerne could then be pressed and sold at about £6 per ton. A profit of about £1,000 could also be made in that district by keeping, say, 45 cows. During the discussion which followed, Mr. Bristow asked if there was a ready sale for pressed lucerne. Members were of the opinion that the sale depended a great deal on the seasons in the back country. Mr. Mudge did not consider that 50 cows would return £1,000. Mr. Dawson replied that with the sale of pigs and calves, as well as cream, it would be quite possible.

NORTH BOOBOROWIE (Average annual rainfall, 16.35in.).

April 16th.—Present: seven members and visitors.

HAYMAKING.—The following paper was contributed by Mr. J. Sullivan, jun.,
 "The most suitable wheats for hay in this district are "Crossbred 53," "Qing Fan," "Yandilla King," and "Bluey." Federation is too dry in the straw, and the wheat shakes out of the heads very easily when it is being taken from the stack to the cutter. For feeding on the farm, it is advisable to cut hay slightly on the green side. It should be left in the sun one full day before being stacked, and then placed in stacks four or five sheaves wide. It is not advisable to make large stacks, because they take too long to dry and are more easily damaged by rain than the smaller stacks. Before commencing the stack, a good bed of straw should be laid down to protect the bottom sheaves from damp. The walls of the stack should be given an outward slope in order to run the water from the roof clear of the sides. The centre of the stack should be 4ft. or 5ft. higher than the sides before the roof is commenced, and the roof started with the heads of the sheaves projecting outwards. If the stack is properly roofed, it is not necessary to use loose straw on the top. The stack should be thatched or covered with rubberoid roofing if the hay is to be allowed to remain in the paddocks for a year or two."

REDHILL (Average annual rainfall, 16.79in.).

April 15th.—Present: 15 members.

MATING AND CARE OF THE BREEDING EWE.—Mr. S. A. Bates read the following paper:—"During the period of high prices for both the wool and carcass of sheep it is advisable for the flockowner to exercise the greatest of care in tending the breeding ewes. The rams are usually joined with the ewes about the middle of November and removed at the middle of January. The majority of lambs will be dropped in April and early in May, and the whole flock will have finished lambing at the end of May. With a good reserve of feed an early lamb is preferable to one dropped later in the season. The former will eat more wool and the lamb is better able to look after itself when weaned. If correct mating is to be pursued, the ewes and rams must be classed in the wool, and after shearing marked with a distinct number. Many flockowners make a practice of buying good flock and selected rams from a reputable stud, and then count off the ewes and turn in the rams. This leaves mating to chance. The better way is to buy the rams in the wool and class the ewes accordingly and breed with an object in view. In open country and large areas 3 per cent. of rams will be required, but where the paddocks are small 2 per cent. will be found enough. In the case of young rams being used, it is always an advantage to have an extra ram or two on hand, because they are hard workers and very often fall away in condition and have to be removed from the flock. The rams, when removed from the ewes, should be carefully examined, crutched, and the wool cleaned from the pizzles, and heads that have been scarred through fighting should also be attended to. The rams should then be put in a fresh paddock of green feed. The ewes should be carefully crutched before lambing, but it is not a wise plan to handle the ewes during the fourth month of pregnancy, for this very often harms the ewe. The crutching should be done in a woolshed and not in the corner of a paddock as is very often the case. The man engaged in crutching should not under any consideration "leg" the sheep on to the board, but should carefully carry them out and place them in position on the shearing board and shear the crutch out cleanly and up over the tail for at least 3in. It is also advisable to clean around the udder carefully to minimise the danger of fly pests. The ewes, when crutched, should be counted and put in their respective paddocks, which should have enough feed to carry them over the lambing period. Give the ewes all the attention possible, drive or ride through them at sunrise and again before sunset. Pick up and bury or burn any dead lambs and remove any dead ewes, because these draw pests, such as crows, hawks, foxes, and blowflies, to the lambing paddocks. Occasionally the ewe will need assistance during the birth of the lamb. This should be given gently, as little force as possible being applied. In a normal presentation the nose of the lamb protrudes with the two front feet showing under it. If the presentation is tail first the lamb should, if possible, be pushed gently back until it is possible to

secure the hind legs, when the rest will usually follow easily with a gentle downward pull. When the head only appears, it should be moved back and the assistant should try to get hold of the front feet and gently pull the head and feet at the same time. In the case of twins the head of one may only appear, and the one underneath should have been the first to arrive, the assistant should try to get the top lamb and secure the head of the bottom one. The lamb will probably be dead, and if the head is secured it should be cut off and the front feet obtained. After the removal of the lower lamb, the other will come naturally. After the lamb is born the assistant should move to a distance promptly, because the ewe is likely to run off and leave the lamb. This may be overcome by tying the legs of the ewe and placing the lamb at her head, and when released some time after she will probably mother the lamb. Occasionally a ewe will be found down after lambing and will be weak and stiff. Turn the ewe on the other side and work the two front legs; the same attention should also be given to the hind legs. Place the ewe on her legs and try to get her to walk a little by holding her weight. If the sheep will stand alone the helper should remove to a distance and soon it will attempt to move off and will probably fall again, but, in most cases, if picked up a few times, will soon find the use of its legs. If very weak, the ewe is still worth saving and should be removed to the woolshed, where attention for a few minutes each day for a few days will probably put the animal on its legs. Always work quietly amongst the ewes and lambs. Always leave the dog at home or keep it well under control when in the lambing paddock, and by the end of the season the ewes and lambs will become so accustomed to your movements that they will not fear you."

BRINKWORTH, May 5th.—The inaugural meeting of the Brinkworth Branch was held in the local Memorial Hall on Monday, May 5th. Mr. F. C. Richards, of the Department of Agriculture, was present and delivered an address, in which he dealt with the objects and working of the Agricultural Bureau.

SUPER?

THE BEST

CERTAINLY IS

“TOP”

The Adelaide Chemical & Fertilizer Co. Ltd.

LOWER-NORTH DISTRICT.
(ADELAIDE TO FARRELL'S FLAT.)

BETHEL.

April 8th.—Present: eight members.

FARM HARNESS.—Mr. F. Geue read the following paper:—“One of the most important points with all harness is to oil it well and often. All farm harness should have at least two dressings in one year. I have found a mixture of equal parts of neat'sfoot oil and tallow very good for ordinary working harness, and if this is applied occasionally it will lengthen the life of harness very considerably. To think that it costs too much to repair harness is incorrect. The expenditure of a few shillings, especially on the collars, will make them last for a longer period. Attention should be given to the rim as well as to the lining of a collar. Have it repaired as soon as possible after it is worn through on any part, it will not only save the collar, but also in many cases save the shoulders of the horse. Many farmers say they have not the time to oil harness, but I make it a practice to keep the oil in the stable and oil the harness occasionally when the horses are feeding during dinner hour. Horses will not get sore shoulders so readily if backbands are used. These should not be too long in order to make a straight pull from the hames to where the backbands are hooked on to the chains. If there is a swaying of the swings, such as happens when working hard, stony, or stumpy country, the backbands will take away to a great extent the wear from the horses' shoulders and thus prevent sore shoulders. It is advisable to have a breast plate on hand so that if a horse shows signs of sore shoulders the plate can be used for a day or so, and if the collar is used again and exchanged at different times with the breast plate, it is quite probable that the shoulder will heal while the horse is at work.”

BLACK SPRINGS.

February 19th.—Present: 12 members.

MIXED FARMING.—Mr. A. Mickel read the following paper:—“The present high cost of production, the low price of wheat, and the wet seasons that have been experienced during the last few years have tended to make wheatgrowing a barely payable proposition. A system of mixed farming is essential. For this I favor wheat and sheep. For wheatgrowing the first thing is a good, clean fallow, and ploughing should be finished by the end of August. To be able to work the fallow properly after ploughing, the land should be harrowed at the right time and cultivated before the weeds have gone to seed, because some plants the sheep will not eat. Should summer rains fall, another harrowing will considerably improve the fallow. On the lighter classes of land seedling should be started any time after the middle of April, if the soil is in a suitable condition, to give the crop a good start before the commencement of the general winter rains. On heavy ground the middle of May is early enough to start sowing. If the crop makes an early start it generally grows too much straw if left untouched, but sheep can be used to feed off the crop, which, as a rule, will yield returns equal, if not better, than those that have not been fed off. Sheep at present pay better than wheat, and they are less trouble. The present high price of wool and lambs makes sheep very valuable. It would pay to grow a crop and handfeed sheep with it when there is not enough feed elsewhere, but even should the seasons become better for wheat-growing and not so good for sheep, it will pay to produce both wheat and sheep, because sheep save the wheatgrower a lot of work on the land.”

Mr. S. Foley also read a paper “The Motor Car on the Farm.”

On March 18th Mr. A. H. Robin, B.V. Sc. (Government Veterinary Officer) gave a veterinary demonstration in the afternoon, and in the evening addressed a well attended meeting on the subject “Common Ailments of Stock.” Mr. F. C. Richards (of the Department of Agriculture) was also present and spoke on “The Work of the Agricultural Bureau and the Department of Agriculture.”

FARRELL'S FLAT.

April 11th.—Present: eight members.

GATES ON THE FARM.—Mr. M. J. Marchant read the following paper:—“The best gate in my opinion is one of medium weight, constructed on the cyclone principle, well swung on a post set in concrete to prevent it giving, and, in time, allowing the gate to sag. The fastening should be strong, but simple enough for a child to work. This, of course, is for the gate or gates at the homestead which are frequently used. I also suggest that this gate should be 16ft. wide, in order to allow of any implement up to the 8ft. header passing through, and also to save the trouble and extra time wasted in dismantling the machine or cutting the fence. A very heavy iron gate is not advisable, because the post on which it is swung is seldom strong enough to carry the weight, especially in wet districts, and, as a rule, it is soon dragging on the ground and has to be carried every time it is opened and shut. Some people contend that horses rubbing on them break the lighter gates, but this can be remedied by twisting barbed wire around the bars. For the paddocks, where the gates are not so much used, those of wire, if neatly and strongly constructed, serve the purpose. The fastening should be strong and easily manipulated. I favor the strainer principle. These gates, too, should be wide enough to allow of the largest implement on the farm passing through.”

LYNDOCH (Average annual rainfall, 23.0in.).

March 20th.—Present: 12 members.

DAIRYING.—In the course of a paper under the title “Breeding and General Management of Dairy Cows Kept as a Sideline on a Farm,” Mr. A. Springbett said his first experience had been with stock that were left to forage for themselves in the paddock. If green feed were available, they gave a fair supply of milk, but failing to find the necessary feed they went dry after having been in milk only for four or five months. Such a state of affairs, he was sorry to say, was still in evidence at the present time. He was convinced that if haystacks, that were ultimately sold to a chaff merchant at, say, about £3 per ton, were fed to the dairy cows the returns from the fodder would be far greater. Many years ago he had laid down a small plot of lucerne; fed to the cows at milking time this was responsible for marked improvement in the yield of the dairy herd. That led him to feed the cows with hay, chaff, &c., during the winter. Although the cows appeared to receive ample feed in the paddock, they did not give down their milk unless a small quantity of chaff was given to them at milking time. Cocky chaff had been tried, but he thought its place was anywhere but inside the stomach of a cow. Unless there was good green feed in the stabbles Mr. Springbett considered that it was better to leave such feed to the young stock, because if the cows were placed in poor stubble paddocks the milk flow would certainly decrease. Some time later the addition of bran to hay chaff was tried, and the increase in the milk yield was immediately noticeable. When feed was scarce in the paddocks, he gave the cows 10lbs. to 12lbs. of chaff and about 5lbs. of bran. Keeping records of performances of the cows was an excellent plan. In addition to being a means of stimulating interest in the work of the herd, it enabled the farmer to gauge the worth of individual cows, and it was also a guide to the health of the animals, because if the test showed a falling off the dairyman would immediately suspect that that cow was not in good health and steps could be taken to treat her without delay. His cows had been tested at the buttery factory. When samples were forwarded for testing, care should be taken to see that equal quantities of the morning and night milk were taken as soon after milking as possible, and that the milk was thoroughly stirred before the sample was taken from the hukket. He had tests made twice during the lactation period of each cow—the first about a month after the cow came in, and the second, a month before drying off. The two tests could then be averaged and a fair indication of the yield for the whole of the period would be obtained. Referring to the health of the cows, Mr. Springbett said he had found a dose of 6ozs. of Glauber salts, 2ozs. of ginger, and $1\frac{1}{2}$ pints of fairly hot water to be an excellent drench for cattle. One of the old style lemonade bottles could be used for drenching. To drench the cow the following procedure was suggested:—“Tie the animal up, and pass the left hand down the front of the head, taking a grip of the nostrils with the thumb in one and the first finger in

the other. Then raise the head of the cow until the lower jaw is in a horizontal position, and with the bottle in the right hand gently pour the drench down the animal's throat.' As to the different breeds of dairy cows, he said, it was a difficult matter to mention any one breed as being better than another. He did not consider the Jersey a suitable breed for the farm. These animals were undoubtedly good butter producers, but after they had served their period at the bucket they were almost unsaleable for beef, and the calves could not profitably be weaned for vealers. He preferred the heavier breeds—the Shorthorn or the Friesian. Both breeds were heavy milk producers, and the extra quantity of skim milk that was obtained was a very profitable form of food for pigs, which should always be kept in conjunction with a herd of cows. Whatever breed was decided upon the aim should be to improve that breed by using a bull whose ancestors were heavy producers. The heifer calves from cows that had proved themselves profitable animals by the test should be retained. Mr. Springbett then gave a detailed table of the performances of the six cows of his dairy herd. Continuing, he said the milking shed on his holding was a straw roofed structure, the back and both ends being closed in with iron and the open side facing the east. The manger was built with stone, the inside being covered with a coat of cement. The cows were tied up whilst being milked and fed. A leather strap was kept on the cow's head around the horns, and a short chain with a spring hook was fixed to the head of the stall. The spring hook clipped on to a metal ring on the strap around the horns, and the cows could be quickly tied up or released. Water should be provided in such positions that the cows would have easy access to it at any time. He always made a practice of washing the teats and udder of each animal before it was milked. The average takings over a period of four years from his six cows were as follows:—Cream returns, £115; new milk used for four families, 365galls. at 1s. 6d. per gallon, £27; butter for three families (6lbs. per week), 312lbs. at 1s. 3d. per lb., £19; making a total of £161. Expenses—Bran and chaff, £46; green fodders and grazing, £14; total, £60, leaving a net balance of £101, or a total profit from each cow of £16 6s. vd.

LONE PINE.

January 24th.—Present: 12 members.

HARVEST REPORT.—The 1923-4 season, with its unusual weather conditions, and the effect which they had on seeding operations, and the subsequent development of the crops was dealt with in a paper by Mr. T. Fromm (Hon. Secretary). Dealing with the results secured from wheats grown in a series of plots sown with about 50 different varieties, and laid out by the Branch with the object of ascertaining the sorts most suitable for hay growing in the district, Mr. Fromm said those which gave most promise were Late Guyas, Crossbred 53, and Leek's Rustproof. In a general way, nearly all late crops yielded satisfactory results.

ROSEDALE.

April 16th.—Present: 12 members.

PREPARATIONS FOR HARVEST.—The following paper was contributed by Mr. H. Nettlebeck:—‘‘The success of the harvest depends on the preparation given the fallow throughout the year. The method of working the fallow depends principally on the nature of the soil. In black soil it is advisable to keep the surface loose to a depth of from 2in. to 2½in. so that there will be a firm, hard layer underneath, which, even if it has not rained for months, can usually be moulded like putty in the hand. With the fallow in such condition there is nothing to be gained by working it in April in the absence of rain. Black soil is liable to crack after a long, dry spell; then it would be advisable to harrow lightly. This year a very wet and cool autumn has been experienced. Weeds, such as stinkwort, dog-weed, and paddy melons, rob the soil of moisture, and, if allowed to develop fully, interfere with the implements at seeding time. The searifier should then be used before the ground becomes too dry and the weeds too rank. The farmer with black soil has an advantage over the man who has to deal with red clay land. On black soil, one can use the harrows freely because this class of ground never sets hard, but I would not use them on red soils until seeding time. Instead of using the harrows after the plough to level the land, work a narrow share spring tooth cultivator. It is advisable to have the fallow in a ‘cloddy’ condition because

it worked down too finely it will set very hard, and if the paddocks are hilly the soil will wash badly after a heavy rain. Deep cultivation just before seeding time should be avoided on soils of both classes in order not to disturb the seed bed. There is no danger of the black soil becoming so water logged that the germination of the seed will be endangered. The variety of seed to use depends on the district and on the time of sowing. This being a hay-growing district, it is advisable to mix several varieties of wheat with oats. For good, weighty hay I prefer a mixture of oats and Le Huguenot and any of the late wheats, sown at the rate of one third of each. Any paddocks showing signs of 'wheat sickness' can be improved by sowing oats. For late sowing I prefer early varieties of wheat. No crop will give a maximum yield unless liberally fertilised. At least 1*ewt.* of 3*6* per cent. super should be applied at seeding time. It will not cause a rank crop, nor will it burn off the crop in a dry year."

TARLEE.

March 25th.—Present: 20 members and five visitors.

LESSONS FROM THE 1923-24 HARVEST.—In the course of a paper dealing with this subject, Mr. D. L. Clarke said that in that district few farmers had been able to complete their intended seeding last year. Most of the crops, except for a week or nine days in the early part of the season, had been bogged in, and some farmers had not been able to get on their land until late in August, and several kept on drilling until the end of that month. On the speaker's farm the drill had been actually idle for 13 weeks. Generally speaking, the yield from the grain crops that were sown early was disappointing, but the returns for hay were good. It sometimes happened that the early sown wheat did not yield nearly so well as that sown after the second rain; such was the case last year. Any land that was bogged in, except the black soil, did not give good returns. The surprise of the season was the good returns from the crops sown towards the end of August. That, of course, was due to the late spring and early summer rains. The great difficulty was in getting a good seed bed owing to the leather-like surface of the ground. A good seed bed was very desirable at any time, but for late sowing it was absolutely necessary, otherwise the germination of the seed was delayed. The lessons to be learned from the past season, in the opinion of the speaker, were as follows:—"Do not pug in the seed during wet weather unless it is land that will not run together. Be very careful in the preparation of the seed bed, and it will also be noticed that Nature generally arranges conditions favorable for a harvest." In the discussion that followed, Mr. J. Kelly remarked that in September last he worked an area of fallow which he had previously been unable to sow with wheat owing to the wet seeding. The paddock was sown with Sudan grass for a summer crop. The crop made splendid growth and when harvested in February gave a highly satisfactory return for seed. Mr. A. L. Molineux said he had sown oats last year at the rate of 1*bush.* per acre and 90*lbs.* of 45 per cent. super, which gave a return of 2*½* tons of hay per acre. Mr. Molineux further stated that the most important lesson he had learnt from the 1923-24 season was to be ready to push on with seeding as soon as conditions were favorable. Mr. G. M. Cornish said he had sown a paddock with peas, and, although late and conditions unfavorable, a return of from five bags to six bags had been obtained. A very satisfactory return from Sudan grass both for seed and pasture had also been obtained.

TWO WELLS (Average annual rainfall, 16.36in.).

January 28th.—Present: eight members.

HARVEST REPORT.—A lengthy and detailed report dealing with the 1923-4 season was read by Mr. H. J. Pratt. After referring to the weather conditions and the effect they had on seeding operations, and the subsequent growth of the crops, Mr. Pratt enumerated the cultural and manorial practices which had been adopted with each individual variety of wheat and oats that he grew and the yields secured from them. During the discussion which followed, Mr. L. L. Wasley said Daphne had been his best crop, cutting 3 tons of hay and reaping 2*bush.* per acre. Mr. H. W. Kenner stated that King's White from the Roseworthy Agricultural College

had yielded 25bush.; Sultan, 22bush.; Ford, 16bush.; and Daphne, 16bush. Baroota was the best all-round crop, cutting 1½ tons of first quality hay, and requiring 18bush. of first class seed.

LIGHT'S PASS, April 16th.—Mr. A. Baker (Dairy Instructor at the Roseworthy Agricultural College) attended the meeting and delivered an address, "Dairying," to an audience of 19 members and four visitors.

LYNDOCH, April 17th.—The meeting took the form of a "Question Box," when a number of subjects of timely interest were brought before members for discussion.

NANTAWARRA, April 17th.—Mr. Pridham read a short paper, "Farm Management," and an interesting discussion ensued.

OWEN, April 23rd.—Mr. D. F. Laurie (Government Poultry Expert) attended the meeting and delivered an address "The Poultry Industry."

SALISBURY, April 13th.—Sixteen members and several visitors attended the meeting, when Mr. G. Hambly read an informative paper on "Lucerne Cultivation."

SALISBURY, May 6th.—A well attended meeting of members and visitors was addressed by the Assistant Dairy Expert (Mr. H. J. Apps), who dealt with the subjects "Herd Testing" and "The Importance of Breeding."

WILLIAMSTOWN, April 25th.—Mr. W. Gilbert read an interesting paper, "Sheep Breeding," and a lengthy discussion followed. Mr. D. Manser presented a report of the Conference of Lower North Branches of the Agricultural Bureau, held at Riverton on April 10th.

WILLIAMSTOWN (WOMEN'S), April 2nd.—Mrs. Wild read extracts from an article "Infectious Diseases," which provoked an interesting and instructive discussion.

YORKE PENINSULA DISTRICT.

TO BUTE ISLAND BRENTWOOD.

March 27th.—Present: 17 members and two visitors.

FARM EQUIPMENT.—The following paper under the title "Most Up-to-date Equipment for a 640-acre Farm" was read by Mr. H. Le Poidevin:—"First of all I would suggest a spnr-wheeled tractor to take the place of the horses, and next an adequate supply of water. Next a 12-furrow plough, which would be large enough for the tractor, and fallowing with this implement would cost about 1s. 3d. per acre. For ploughing back the same plough could be used, thereby saving the expense of an extra plough. Twelve diamond harrows can be worked by the tractor on top gear. For sowing the crop I favor a 17-hoe combine. In harvesting, the farmer has to consider local weather conditions, and on a farm of 640 acres one man should be able to handle the harvest without additional labor, so that I suggest the farmer should purchase a machine that can handle all classes of crops, i.e., a 12ft. reaper thresher. The farmer with a tractor will find it best to pay to have the grain carted to the port, but a 3in. spring trolley with two horses would be useful for farm cartage, such as hay, seed, and super." In the discussion that followed, Mr. F. J. Nation said it had yet to be proved that the tractor was better than horses for a one-man farm. A team of eight good horses he considered sufficient to work a 640-acre farm, and if a farmer bred only a foal or two every year, in eight years he would still have a good team. Sheep might have been included as part of the plant necessary on a farm. Mr. G. H. Boundy said he was convinced that the tractor was an ideal machine for a farm comparatively free from stones and stumps, but he did not advocate one for rough land. Last season, on good land, the cost of the work done by his tractor was—Ploughing back with 10-furrow plough, 1s. per acre; cultivating with 12ft. cultivator, 6d. per acre; rearing down and tangled wheat, 1s. 4d. per acre; 100 acres of barley, five and a half bags to the acre, in 36 hours, at a cost of 9d. per

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acre. That, however, did not include depreciation of plant. Mr. L. G. Boundy agreed with the paper in respect to the suggested implements. He also compared the reaper threshers with the headers and strongly favored the former. Mr. A. F. Twardz was satisfied that the tractor was a particularly good proposition, especially for a one-man farm, but he thought the caterpillar type better than the wheel tractor, especially for seeding. He also favored the combined drill and cultivator. Mr. J. J. Honner considered that for a 640-acre farm of good land a tractor was a valuable asset. He agreed with the paper generally, but there was one very necessary thing omitted for an up-to-date farm, and that was an automobile. Mr. F. L. Carmichael said he had yet to be convinced that the tractor would supersede horses on any farm. If anything went wrong with a tractor the work was held up, but it would be very unusual for a farmer to have all his horses so ill as to stop the work, perhaps at a critical time. Mr. J. Boundy said that time alone would prove whether the tractor would supplant the horse, but up to the present his tractor had given every satisfaction. Last season he had reaped 3,500 bags with it and a reaper-thresher. There was very little cracked grain and no difficulties that could not be overcome with commonsense adjustments. He agreed that the tractor was only suitable for good land, but the combined drill and cultivator was a clear saving of one man's labor, the resulting crop being satisfactory in every respect.

KILKERRAN.

April 15th.—Present: 10 members and two visitors.

THE COMBINED DRILL AND CULTIVATOR.—Mr. J. R. McPherson, who read a paper dealing with this subject, said there could be no doubt that the combined drill and cultivator was a saving of expense and labor to the farmer, for in the first place the "combine" could be purchased for less money than a cultivator and drill. Where the separate implements were employed the farmer only had the use of his money, in the ease of the drill, for a short period each year during seeding, but a "combine" could be used to advantage during nearly any stage of cultivation. If a farmer used a drill and cultivator during seeding he would require from six to seven additional horses and an extra man, because a 21-hoe "combine" would work with 10 horses, and a 12ft. cultivator would require 16 horses, and a 21-hoe drill six horses. In wet districts the "combine" was a boon to farmers, because it would work in the wet when a drill would block up. The "combine" would work in any reasonably cleared land with few or no big stumps, small stumps made no difference. The "combine" had the same advantages over the drill as the harvester had over the stripper. The fact that more farmers every year were getting "combines" proved that it had advantages over the drill and cultivator, otherwise the new implement would not be purchased. In the discussion that followed, it was generally agreed that the "combine" could not be worked successfully in very rough country, but Mr. C. F. G. Heinrich was of the opinion that with reasonable care it would work satisfactorily in fairly rough ground, especially the newer machines, because they were built with more clearance than the earlier models, and the floats were very much longer. According to Mr. S. T. Keightley's experience, the shares on the "combine" were set too flat to work in very rough ground. The majority of members favored the "combine" in preference to the drill and cultivator.

PASKEVILLE (Average annual rainfall, 16.10in.).

April 15th.—Present: 12 members.

HAND FEEDING SHEEP.—Mr. R. D. Norris read the following paper:—The majority of sheepowners have not paid sufficient attention to hand feeding sheep during the early winter months. Some farmers are inclined to think that all that is necessary is to get the sheep, put them in a paddock, and the profit begins without further trouble. But with the high prices now ruling for sheep, it is necessary to take every care, and obtain the very best results in the shortest possible time. I am referring more particularly to keeping sheep in good condition for market, but it is never a mistake to hand feed any class of sheep. Ewes with lambs will hold their condition better, and the lamb will make a stronger growth if the mother is given a ration of a few pounds of chaff, sprinkled with oats or barley each week. The time to make provision for hand feeding is

approaching, the dry feed is getting spent, and the sheep begin to race after the little green that is showing, which results in the sheep losing condition in a few days. This can be prevented if the sheep are hand fed on chaff, with a feeder made for that purpose, providing a little trouble is taken to bring the sheep to the feeder a few times and let them smell what it contains. After that they will come around when they see the feeder being refilled. It is necessary to place the feeder within a short distance, say, 20yds, or 30yds, of the water trough. The class of feeder I have been using can easily be made on the farm. It will hold from 15 to 20 bags of chaff, has an iron roof, and the chaff is always kept dry, and whilst the sheep are feeding from the two troughs—one on either side—the troughs are refilled with chaff from a V-shaped bin above. For building this class of feeder, take four pieces of jarrah 4in. x 4in., each 3ft. long, to form the bottom. Then take eight pieces of oregon 3in. x 3in., 3ft. 3in. long, and mortice each of them into the jarrah to form the V-shaped bin above by bolting the oregon in the mortice in the jarrah. The mortices in the jarrah must be about 11in. apart and on an angle, so that the oregon uprights, or side pieces, are 3ft. 3in. apart on the top, thus forming the V-shaped frame work. The length of the trough can be, say, 16ft. or 20ft., to meet the length of timber for the sides and bottom. After the oregon uprights have been bolted into the mortices in the jarrah, put them all in line and position, say about 5ft. apart, to meet the length of the sides and bottom boards. Then nail on flooring boards, the full width of the jarrah. Bolt on the side top pieces of 3in. x 2in. oregon. After these two pieces are bolted on the top of the uprights, it is then necessary to put in the two top end stays, which must be 3ft. 3in. long. Next is the divider, similar to a ridge cap, made of any old galvanized iron, placed through the centre from end to end. This should be about 15in. high, to divide the chaff so that equal quantities flow to each side of the trough. The side boards of the bin can then be nailed on to the inner sides of the uprights to within 6in. of the bin floor, thus leaving a space of 6in. for the chaff to flow into the trough as it is being eaten. The divider keeps it from flowing too quickly. By these measurements you will have a trough 10in. wide on each side. The side board of the trough can then be nailed on to the side of the bottom of the floor, and also to the ends and stay pieces that are attached from the ends of the jarrah to the top of the oregon uprights. The end of the feeder can be closed with black tie, and a galvanized roof of 5ft. sheet iron, with lids attached for filling purposes. Two wheels on an axle bolted to the bottom can be attached for moving from paddock to paddock. The axle should be attached nearly two-thirds from the drawing end, so that the horse or whatever is used for removing is pulling up a little, and the trough will carry along on the two low wheels, and when in position it is not necessary to lower the wheels into the ground, but simply to place a block of wood under each end, so that both ends are near the same level. Fill the feeder with chaff and bring the sheep around it, keep them there for a while, and if they are some what shy, try them again the next day and so on, and when once they do know what it contains, there will be no further trouble. In my opinion, it is just as necessary to hand feed sheep as any other stock during the early winter months."

MOONTA, March 22nd.—A paper dealing with the subject "Sheep on the Farm" was contributed by Mr. G. Cook. A keen discussion followed, in which Messrs. J. and E. C. Atkinson, D. Kitto, M. McCauley, J. Brinkworth, and W. Edge took part.

WESTERN DISTRICT.

DARKE'S PEAK.

April 2nd.—Present: seven members and two visitors.

HORSES ON THE FARM.—In the course of a paper dealing with this subject, Mr. P. A. Miller said there were many points to remember when caring for horses on the farm. First, horses were one of the main servants of the farmer, and the animals could not do justice unless they received proper care and attention. The following points should be carefully considered by every teamster:—First, good feed given at regular intervals; second, provision made for an ample supply of

water; third, regular work, and hours of work not too long; fourth, good and clean stables; fifth, well-fitting collars in good repair." If those points were remembered the team would always be in good heart for a day's work. The teamster should not expect three horses to do the work of four. He was a firm believer in feeding long hay when the horses had plenty of time to chew. In dinner hours, he advised giving one kerosene tinful of chaff with crushed oats and bran. It was also advisable to provide a salt lick, and to sprinkle salt on the hay when it was being stacked. The trough should be some distance away from the stable, and the horses should be watered before feeding. It was a mistake to work the horses late in the evening, because nothing made a horse more leg weary than working after sundown. A good cure for sore shoulder was to wash the shoulders with cold water at dinner times and at night. A ^{good} discussion followed.

GREEN PATCH (Average annual rainfall, 26.56in.).

March 17th.—Present: 10 members.

FODDER CROPS.—The monthly meeting was held at Mr. R. Sinclair's homestead. Mr. Sage drew the attention of members to his fodder crops which were inspected by the Branch during February. He had turned dairy cows on to them, and it was noticeable that the cows wandered over the plot and finally settled down on the Japanese millet and never left it until it was eaten out. The sunflowers were the last to be eaten by the herd. He was of the opinion that Japanese millet was the best summer fodder for cows. He advised sowing the seed about the middle of October on well worked fallow. On no account should the plot be harrowed after it was sown. Mr. Sage also read an extract from a letter received from the Principal of the Roseworthy Agricultural College (Mr. W. J. Colebatch, B.Sc. (Agri.), M.R.C.V.S.), advising sowing rye and oats in equal parts each way across a plot to provide fodder for mares and foals. Several members present said they had tried that practice and were pleased with the results.

LIPSON.

March 22nd.—Present: 10 members.

CARE OF FARM HORSES AND HARNESS.—The following paper was read by Mr. R. C. Carr:—"Every care and attention should be given to the team on the farm, because the farmer depends to a very large extent on its services for his livelihood. A team that is well cared for can always be relied upon for a good day's work. In the first place a good, warm stable is essential and should be built on rising ground facing the east. I do not favor confining the horses in a small yard all night. If a small enclosure of about 5 acres adjoining the stables is fenced in and well sheltered by a good growth of timber, it will be very much better for the animals because it will give them more liberty and a better chance of having a good roll and a good rest on dry ground. If, however, the horses have to be kept in a small yard, it should be cleaned out once every week and straw bedding provided. The next item of importance is feeding, and regular feeding hours should not be overlooked. Good hay chaff should be given three times a day, and bran can be added to the midday feed because it is a good medicine for horses. For the last feed at night I recommend long wheaten hay. It is a mistake to give the horses more feed than they can clean up at night. The team should have from one and half hours to two hours feed in the morning before going to work, and always watered before feeding if possible. A horse should not be made to work a full day immediately after it has been brought in from a long spell. Placing a few lumps of rock salt in the manger is a good thing for the horses if they are drinking fresh water. Every horse should be provided with a good fitting collar—I prefer the pipe collar to any other kind. A heck band should always be used, especially in low draughts, because it keeps up the chains and holds the collar in a better position. If horses are kept in good condition and properly groomed, they should never be troubled with sore shoulders. In nearly every case low condition, badly groomed shoulders, and ill-fitting collars are the cause of sore shoulders. Another important point is the care of harness because of the very marked increase that has taken place in the cost of all leather during the last few years every farmer should exercise the utmost care in its

upkeep. If reasonable care is taken, the harness will last for many years and be a pleasure to use and a credit to the owner. All new harness should be well oiled before being used, and all other harness should be oiled at least twice a year with neat'sfoot oil and kept in a good shed adjoining the stable. It is a mistake to hang the harness in the stable, because the horses are very apt to knock it down and trample it under their feet. Harness should never be left out in the weather when not in use. Finally, when the collars are placed on the horses, they should be carefully examined to see that no dirt or grit is on the lining, because this is often the cause of horses contracting sore shoulders."

MALTEE.

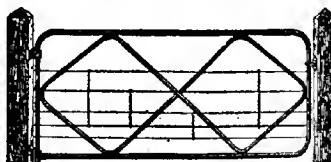
March 14th.—Present: 16 members and three visitors.

FALLOWING.—The following paper was read by Mr. A. J. Bowell:—“The subject of fallowing is a very complex one because so much depends on the nature of the soil and seasonal conditions that it is impossible to lay down any hard and fast rules for the work. The stiffer clay and loam soils can, with advantage, be fallowed to a greater depth than the lighter sandy soils, say, 2in. to 3in. in the heavier soils, such as are to be found at Maltee, and 1½in. to 2in. in the lighter soils. Fallowing should be commenced as soon after sowing as possible and finished before the grass seeds are matured. Soil which forms into clods should be worked with the cultivator and harrows. Second and subsequent workings should not be done so deeply as the first, the main object being to kill weeds and form a fine surface tilth with a fairly fine seed bed. In sandy or powdery soils so much work is not profitable, and, in fact, will probably prove harmful, being liable to bring on take-all. Land which is inclined to run together in hard lumps can be rolled and then harrowed, but all, or as much as possible of this working, should be done whilst the ground is wet.” In the discussion that followed, Mr. Marchant said he did not favor fallowing too early, because the bulk of the grass seeds would not have germinated, which would entail more work subsequently. Mr. C. T. Schwarz asked what implement the writer favored. Mr. Bowell said a properly adjusted plough. Mr. Cranwell said he had tried the type cultivator for fallowing, but in wet weather the implement was not a success.

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"TAKE-ALL."—This subject was again brought forward and members said that the disease made its appearance in all kinds of land, but appeared worst on the higher lands on well worked fallow land and on land that had carried a second crop. One member stated that he had observed the fungus this year on land that had only been cropped once after being cleared six years ago.

MILTALIE, (Average annual rainfall, 14.55in).

March 15th.—Present: eight members and three visitors.

HINTS FOR THE NEW SETTLER.—A paper was read by Mr. A. S. Brown:—"In the first place, the blocker should select a homestead site convenient to the road, paddocks, and water runs, he said. A temporary building should be erected as near as possible to the site of the permanent building to avoid difficulties in moving furniture, &c., when a good, substantial house has been built. Dams should be made in several parts of the holding, and, as a standby in case of droughts, an underground tank of at least 30,000galls. capacity should be excavated. For household purposes, two ordinary galvanized tanks of 600galls. capacity should be provided, and tanks should also be provided to conserve the water from the roofs of all outbuildings. Fencing the property was another item which should not be neglected. Sheep were an asset on every farm, and the whole block should be wire-netted with a fence consisting of strong timber posts, with two barbed wires on top and a plain wire half way up the netting. The height of the fence should be about 3ft. 8in. To assist in beautifying the property a garden should be laid out close to the homestead, proper attention being paid to drainage facilities. The garden should not be too large, or it would become neglected. The outbuildings necessary on a farm, if built properly and of lasting material, did much towards enhancing the value of a holding. The stables, which should not be too far from the house, say, about 90yds., should be built of stone with an iron roof, with the open side facing the east. The manger should run the whole length of the stable, and at the rear a space should be left for storing chaff. The chaff cutter should be so placed that the chaff fell in the space behind the manger to save time when feeding. Implement sheds, blacksmith shop, &c., if possible, should be built with stone walls and iron roofs. Bush sheds would last only for a limited period, and at the same time they served as a harbor for birds and vermin. The implement shed, which should have sliding doors, and the blacksmith's shop should be conjoined, and the latter should be large enough to admit any implement, if necessary. The cowyard should be handy to the house, and the yard adjoining enclosed with a good post and rail fence. The fowlhouse should be constructed of iron with as little wood as possible. For perches he recommended old iron bars or piping of suitable lengths. The birds should be housed at night. Horses, cattle, &c., were a valuable asset of the farmer, and his advice to the prospective farmer was 'Commence with good stock and keep on breeding good stock, the extra outlay will be amply repaid.' A well-bred animal was no more expensive to maintain than a mongrel. "Above all things," he concluded, "have a place for everything and keep everything in its place. How many farmers leave valuable machines without cover in all weathers? Remember a machine properly cared for is worth two exposed to the elements.'" In the discussion that followed, Mr. T. J. McEachern thought underground tanks preferable to dams for a permanent water supply. Mr. D. P. Bagwell considered that a shearing shed should be an important item where sheep were kept, the same could also serve as a barn. For the subdivisional fences he recommended plain wire fences, and preferred underground tanks for conserving water for household use. Mr. W. G. Smith differed from the previous speaker in reference to underground tanks for domestic use. Overground iron tanks, he considered, were more sanitary. The Chairman (Mr. J. S. Jacobs) agreed with the writer in reference to permanent material for farm buildings, but did not favor overground tanks for domestic use.

MILTALIE (Average annual rainfall, 14.55in.).

April 19th.—Present: eight members.

DESTRUCTION OF FOXES AND RABBITS.—A paper dealing with this subject was read from the *Journal of Agriculture*. Mr. W. G. Smith, in opening the discussion, said that the present price of sheep should encourage sheepowners to work together by laying baits on their holdings for the destruction of foxes. He advocated the

tributing baits along creeks, near rabbit burrows, and around logs. The baits should be placed close to the north side of some obstacle, such as a log, bush, heap of stones, &c., because the fox preferred to keep its nose to the wind, which in that district was mostly in the south. The baits should be buried and a trail dragged over them. If the baits were buried it prevented birds and ants from getting them, and the fox liked to dig its food out of the ground. Mr. J. P. Jacobs said he had poisoned a number of foxes, and his experience showed that it was best to place the trap or bait where the fox was most likely to look for food. He did not favor open country for poisoning, but selected the low scrub or creeks. To trap he suggested the use of a decoy, such as a dead sheep, and advised setting the traps around the decoy. About four grains of strichine should be used to each bait. Mr. D. P. Bagnell said he had used three rabbits for a trail, the trail being dragged over the baits after they had been covered. Caul fat made excellent baits. Large numbers of baits should be distributed. He favored more strichine than advised by the previous speaker. Mr. W. J. Deer said he had used fowls for baits, but met with no success until he dragged a trail and laid baits on it. Mr. F. Jacobs said he had poisoned as many as 32 foxes in one day. His method was to drag a dead sheep behind a dray and distribute baits about the size of a matchbox freely on the trail in favorable spots. Mr. J. P. Story said he made a practice of cutting a sheep's liver into about 22 baits and then dragging the pouch of a sheep for a trail, following the creek and low mallee scrub. He advocated laying baits freely before the commencement of the lambing season.

MOUNT HOPE.

April 19th.—Present: seven members.

PREPARATION OF THE SEED BED.—The following short paper was read by Mr. A. Vigor:—"In preparing a good seed bed, the first work is to plough the ground whilst it is dry. This is particularly necessary in this district, on account of the short sowing season. The best depth to plough is from 3in. to 5in., because the subsoil is of an extremely poor quality. When the first rains come and the weed seeds germinate, sowing can commence. The weeds should be destroyed by a set of tine or disc harrows. The discs should be well oiled and properly set, or they will be of little use. After the seed has been sown, it is sometimes necessary to work the harrows to cover the seed, especially if the drill is old and the discs out of alignment."

PYGERY.

March 21st.—Present: eight members and one visitor.

THE FARM KITCHEN.—Mr. Geo. Day contributed a paper on this subject. In order to ensure health and strength, the farmer should be fed with suitable food properly prepared. That could not be economically accomplished without a well arranged and fitted up kitchen. Many farmers did not give enough forethought and care to the layout of the home. As a large part of the time of the women-folk was of necessity spent in the kitchen, no pains or expense should be spared in making it as comfortable and as pleasant as possible. The kitchen should be given the pride of the place in the home, because the work done there had as great a bearing on the success of the farm as work performed outside. He thought that room should be placed in the south-west corner of the house where ample window light could be provided for. As the prevailing heavy winds came from the north and west in that particular district, he would place the chimney and stove on the east side of the room. If it were placed on the windward side, and were not carried well clear of the roof, the wind would bank up heavily against the roof causing a heavier pressure at the top of the chimney than in the room, thus preventing the free escape of smoke. Bottom ventilation should be provided from outside to the underside of the grate. The front of the fireplace should not be too high or open. Water should be laid on into the kitchen, but the tap should not be too near the stove or fire, because in the event of fire free access to the tap would be required. The room should also be fitted with a good lighting system; he suggested electric lighting as being the least dangerous and most labor saving. The power could be procured from a windmill fitted to supply a storage battery, or possibly an engine might be on hand to run those lights. The color of the walls

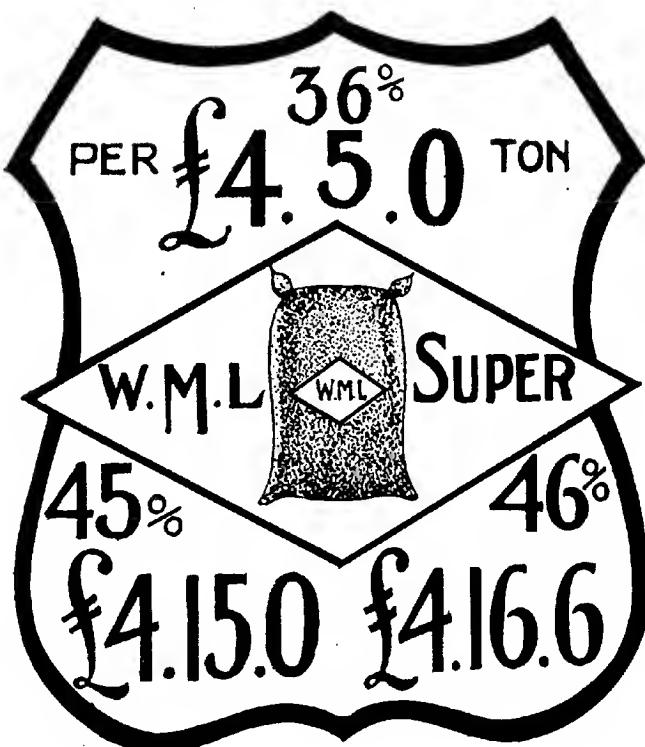
should not be neglected, and the cooks should be given an opportunity to select whichever color they preferred, bearing in mind that the lighter the shade on the walls the greater would be the light. Another convenience would be a large cupboard, or covered counter, let into the wall dividing the kitchen and the dining room and provided with shelves to accommodate the crockery, cutlery, &c. Distinct doors could be provided opening into either room. All prepared food should pass through there, thus saving much running in and out and the opening of doors. He was convinced that if all possible conveniences were provided, the housewife's time and labor would be reduced by half in preparing and cooking the necessities of life, energy, and strength. In conclusion, he laid stress on the point that the cook should have the most perfectly equipped workshop on the farm instead of being relegated to the most despised, dark, and neglected room in the house. A good discussion followed the reading of the paper, the majority of members agreeing with the views of the writer.

ROBERTS AND VERRAN.

March 29th.—Present: eight members.

MODERN METHODS AND MACHINERY.—The following paper was read by Mr. A. T. Cowley:—"The modern farmer studies the principles of soil cultivation, crop production, and stock raising from a scientific viewpoint, methods of farm management from a business point of view. The high cost of labor, machinery, fertilisers, and other necessities results in a return very little above cost of production, and these compel the man on the land to consider what are the best lines to produce and the best methods of producing them. Under the first heading, the tendency in recent years has been toward the abandonment of the production of any one single line in favor of growing several kinds of crops in rotation and raising livestock. It has been found by following a system of mixed farming that, while cultivating the ground for and producing one kind of crop, much of the preparation required for a second crop of some other kind is effected, so that with very little extra cultivation and manuring the succeeding crop can be produced. The production of a second, and even a third, rotation crop followed by fallow or by pasture and then fallow is found to improve the condition of the land for the production of the first or main crop, which in our district will continue to be wheat. The 'in-between' crops that we can grow do not always find a ready market, but they can be put to profitable use on the farm. The first call on the oat crop is the necessity for providing hay or grain to feed the farm team, thus allowing practically the whole of the wheat crop to be harvested for market. Oats and barley can be fed to cows, sheep, pigs, and fowls, thus increasing the carrying capacity of the farm for these sidelines. More livestock being kept in this way again contribute to the production of the soil by returning a certain amount of natural manure to the land, and such a practice also practically eliminates the necessity for cultivation for the purpose of weed killing on fallows. Along these lines, then, the farmer is making way toward the maximum production from a minimum of cultivation. Ploughing is still recognised as the foundation of all cultural work, but lighter ploughs in many instances, a shallower depth of ploughing, and a recognition of the fact that with lighter cultivation most soils require ploughing with less frequency than has been the custom in the past are factors that have combined to make the slowest of all field operations much more profitable than of yore. Whilst less time and energy are expended upon it, greater production results from each ploughing. In tillage and harvesting, wider implements of lighter draught, requiring only slightly larger teams and fewer of them, have to a great extent solved the farm labourer problem, at the same time do the work more economically. Gradually a system of standardization of power-size of implements and machines is bringing the whole team into work practically the whole time, and the combination of some of the lighter units on the two-in-one principle, such as the cultivator-drill and the complete harvester, results in a further saving of man power, and, in most instances, of horse power also. The most modern problem, which is as yet too new to allow of any man's opinion being accepted as final, is, of course, that of 'all mechanical power' v. 'horse power.' The farm tractor has been accented to work in conjunction with horses, and, I believe, is going to increase production to a profitable extent. As a general rule, at present, the team is being retained. Will the tractor relieve it altogether

and enable the land occupied in supporting the horses in stable or field to be put to other and more profitable use! I think that at this stage we can feel certain that the tractor has come to stay, and although the horse will undoubtedly remain for draywork and other small jobs, and in many instances small to moderate-sized teams also will be kept, the large numbers of horses that have of late years been found on up-to-date farms will gradually disappear." Discussing the paper, Mr. D. Jonas agreed with the writer as regards rotation of crops and sidelines. He thought the tractor was a payable proposition, especially in districts similar to Roberts and Verran, where feed and water were scarce at times, but considered a team could not be dispensed with altogether. He favored the combined cultivator and drill because it practically meant that one man could do two days' work in one. He preferred the harvester to the stripper, because the wheat was ready for market earlier when the former machine was used. He did not think cocky chaff was worth the extra cost involved in cleaning the wheat. Mr. C. Masters agreed that the combine was an excellent machine on clear land, but in stumpy land it received too much rough usage. The harvester was suitable for heavy crops on good land, but where the land was rough and the yields uncertain he preferred the stripper. Mr. H. Simmons considered the combine the most economical implement to use at seeding time. The harvester was the machine to use in good crops, but where the yield was light he preferred the stripper and winnower. He agreed that livestock should be carried on the farm because wheatgrowing alone did not pay. Mr. H. Smith favored shallow ploughing and running sheep on the fallow to



check the growth of weeds. The combine was an excellent implement for seed ing, because it enabled a large area to be put in in a short time, which enabled the wheat to make a good start. The tractor he considered a good proposition for haulage and holt work. The harvester was a good machine because it saved much time when reaping, but he did not favor dispensing with the stripper altogether. Mr. H. Lewis considered the tractor a great time-saver. It would work a combine with harrows attached, and was also able to do other haulage and belt work. He preferred the harvester for reaping owing to the time saved. He favored light ploughing. Mr. B. Evans agreed that stock should be carried in conjunction with wheatgrowing, and of all livestock he considered sheep the most profitable, especially as there was likely to be a shortage of wool for many years. Pigs would also be a good source of revenue when the bacon factory commenced operations at Port Lincoln. Crops should be grown in rotation. He preferred oats to barley for mallee country because the former tended to check take-all and also made much better hay than barley. He held the opinion that the tractor had come to stay, but did not think that horse teams would be wholly eliminated. He favored the combine for seeding where the land was in good condition. The harvester was the ideal machine to use for reaping, but he would not advise doing away with the stripper entirely. He considered 2in. sufficiently deep to plough until the land was fairly clear, when the depth could be gradually increased. Mr. F. Masters agreed that the man who pinned his faith to wheat alone would not do too well. He favored fallowing to a depth of 3in. or 4in. Subsequent cultivation should be as light as possible. He maintained that the land in their district was not too rough to use the combined drill and cultivator. Where the land was bushy it would pay to clear it up for the combine. He preferred the stripper and the winnowing, except in very heavy crops. In reply, Mr. Cowley mentioned that deep ploughing would probably have a good effect when the land was consolidated. In connection with harvesting machinery, he thought the time saved by a harvester would more than make up for the loss of the chaff. If the holding was well stocked it would pay to feed off a crop which only promised a low yield of grain. The combine was preferable to an ordinary drill. Where the fallow was kept clean by sheep all the working necessary could be done with the harrows or a light cultivation until seeding time, when the combine was the ideal implement to use.

ROBERTS AND VERRAN.

April 17th.—Present: 10 members.

SEEDING PREPARATIONS.—Mr. C. Masters read the following paper:—“All implements should be overhauled and placed in good working order prior to the commencement of seeding, so that there would be no loss of time during the progress of that operation. Stumps should be picked up and the land made ready for the cultivator or plough immediately after the first rains. Only the best seed wheat procurable should be sown, and every farmer should grade the wheat in order to be certain of sowing only the best grain. Wheat that is liable to be affected with smut should be pickled. All manures should be on hand and stored in a dry place so that there will be no loss of time with the drill. The farm team should be well fed and cared for. The farmer should not bring the team in from the paddock and expect them to work satisfactorily. Harness should be in good repair and the collars stuffed to prevent sore shoulders.” In the discussion that followed Mr. G. Smith said that when horses were brought in straight from a stubble paddock and put to work they could not be expected to do their best work. Implements should be overhauled before seeding commenced. Mr. H. Simmons agreed that all loose stumps and stones should be picked up before one started seeding. Horses should be well fed on hay or hay chaff. Mr. A. Smith said it was a mistake to start seeding with implements that were not in good working order, because it inevitably meant a loss of time later on. Mr. H. Lewis favored putting in a few days repairing implements and getting everything ready for seeding. Horses should be fed on good, hard feed. A bag placed under the collar would do much towards preventing sore shoulders. Mr. F. Masters agreed with points outlined by the writer so far as immediate preparation was concerned, but he held that preparation should commence nine months or ten months beforehand by fallowing and getting in a good

supply of hay, &c. Fallow not only ensured a better return, but also enabled the crop to be put in more quickly. The land should be in such a condition that the crop could be put in as quickly as possible after the rains came. Stock should be carried to keep down weeds and pack the soil, as well as for the direct profit to be derived from that source. Mr. B. Evans agreed that fallow was essential if good returns were to be secured. He considered it a mistake to sow oats dry on old land on account of the weeds, and favored ploughing the land as soon as the stubble was burnt and cultivating ahead of the drill after the first rains. Mr. M. Masters thought that after the first six years all crops should be sown on fallow, half wheat and half oats. The results would be better than if a larger area of wheat were put in and the oats sown roughly. Seed should be graded and pickled in a 2 per cent. bluestone solution. He had sown wheat pickled at that strength and also in a 1 per cent. solution; the latter had smut, whereas that pickled in 2 per cent. was free from disease. The 2 per cent. pickle did not appear to affect germination.

LIFE MEMBERSHIP.—The opportunity was taken of presenting to Mr. F. Masters a Life Member's Certificate of the Agricultural Bureau.

YEBELANNA,

April 26th.—Present: 11 members.

CULTIVATION OF THE SOIL.—Mr. J. Harsmar read the following paper:—“All cultivated plants require water, air, food, and suitable soil temperature, and these factors are influenced by cultivation. It has been estimated that an average annual farm crop requires about 600 tons of water per acre, and this amount scarcely ever falls during the life of a plant. It must be stored during the months of winter and early spring, and the amount stored will be determined by the thoroughness and depth (or otherwise) of the ploughing and cultivation. Skim ploughing and shallow cultivation will not aid in the storing of moisture. Deep and thorough cultivation not only aid in the storing of moisture, but also assists in removing stagnant water, in the presence of which no farm plant can thrive. If there is an excess of moisture and it does not move freely through the soil, the necessary air can only penetrate in a limited quantity, and the temperature of the soil will be comparatively low. All plant food is dealt with, in the first place, by minute organisms with which the soil teems. But those organisms can only be beneficially active when the soil is thoroughly cultivated; indeed, the soil conditions that favor the plant also favor the organisms. Injurious substances in the soil are rendered neutral by the free admission of air, which is brought about by deep and thorough tillage. During the life of a plant its roots continue to spread and penetrate the soil in all directions, hence anything that improves the tilth will also benefit root growth. Plant roots have great penetrating powers, but when the soil is well cultivated the roots spread more easily, with the result that their supply of food is augmented. Good cultivation helps to put soil fertility in an accessible form. When the soil is rich and deep the fertility may be conserved for some time by ploughing just a little deeper for each fallow crop, but, generally speaking, where the nature of the subsoil permits ploughing to a good depth is the system adopted by successful farmers. The depth of the ploughing must always be regulated by the nature of the subsoil. During a wet season, such as we have experienced this year, the soil and subsoil become saturated with water, and during the dry, summer months the soil, unless it be loose or a sandy one, will often become caked, set very hard, crack, and soon dry out. With a good system of cultivation a large proportion of this water can be conserved below the surface soil, and it is from this reservoir that the plant draws its supply in the process of growth. With little or no cultivation, the moisture is soon evaporated and, to a large extent, lost to plant life. Every shower of rain brings with it a percentage of nitrogen in the form of nitric acid or ammonia, and if the soil is in good tilth the plant will benefit by this. On the other hand, if there is a hard surface, the nitrogenous matter, instead of penetrating down to root level, is washed away. It is also necessary to provide a good seed bed. It has been proved that loose earth does not provide the proper condition for root development. Roots thrive best in a well consolidated, but mellow bed, below a loose topsoil, yet having a direct connection with the subsoil in which the water is stored. Thoroughly carried out

with efficient implements the crop may be left to care for itself, the farmer being satisfied that whatever climatic conditions may be during the cropping period he has done all that is possible to give the crop a good start and to enable it to develop strong enough to withstand disease. More than that he cannot do; less than that he should not be satisfied with." In the discussion that followed, Mr. R. Wemyss did not favor deep cultivation where there were no weeds. He thought harrowing the fallow was better than cultivating. Mr. J. Cronin believed in thorough cultivation, followed by working the soil with heavy harrows. Mr. J. Wagner said on his class of land, which was sandy, the use of the harrows was sufficient cultivation.

MALTEE, April 25th.—Several subjects of local interest were brought before the meeting, and an interesting discussion ensued.

PETINA, March 22nd.—The subjects "Take-all" and "Stock Diseases" were brought before the meeting and an instructive discussion ensued.

STREAKY BAY, April 12th.—The Hon. Secretary (Mr. A. P. Kenny) read an article "Cost of Producing a Bushel of Wheat." A keen discussion followed, in which the majority of members contended that a price of 4s. per bushel was needed to make wheat-growing a profitable undertaking.

TALIA, April 12th.—Mr. C. T. Dolphin read an interesting paper, in which he gave the cost of shearing sheep with machines. Other matters of timely interest were also brought before the meeting for consideration.

EASTERN DISTRICT.

BRINKLEY.

March 27th.—Present: seven members and two visitors.

HARVEST REPORTS.—The following reports of grain and hay yields were supplied:—Messrs. E. W. Pearson & Sons, "Mortgage Lifter" oats on fallow dressed with 90lbs. of super, cut 1 ton of hay to the acre and yielded 19bush. of grain. Cape barley stripped 24bush. per acre; English malting, 15bush. per acre; Skinless, 8bush.; each variety was dressed with 90lbs. of super. Wheat on fallow with 90bush. of super per acre cut 2 tons per acre for hay. Several varieties of wheat averaged 15bush. per acre for grain. Peas yielded 21bush. per acre. Mr. A. W. Richards reported—Oats on cultivated grass land cut 1½ tons of hay per acre. Self-sown oats stripped 15bush. per acre. Wheat on stubble land dressed with 70lbs. of super returned 8½bush. to the acre. "Smut Proof" on new ground returned 10bush. to the acre. Mr. S. D. Marshall—Oats for hay, 15cwt., per acre. Wheat, "Major," on fallow dressed with 60lbs. of super, 18bush. "Buck" on fallow, 15bush. Barley, 18bush. per acre. Mr. H. A. Borehard—Oats on fallow dressed with lewt. of super cut 3 tons of hay to the acre. Cultivated grass land returned 1½ tons of hay per acre. Wheat—"Major" on fallow dressed with lewt. of super per acre cut 2 tons of hay to the acre; "Smut Proof, 1½tons. "Major" on fallow yielded 33bush.; "Federation," 25bush.; "Smut Proof," 18bush. to the acre. Cultivated stubble land, dressed with 90lbs. super and sown with several varieties of wheat, stripped 14bush. to the acre.

BRINKLEY.

April 17th.

PIGS FOR PROFIT.—Mr. E. W. Pearson read the following paper:—"At the present time it can justly be claimed that the pig is one of the most profitable animals on the farm. There is, perhaps, no district in the State better suited for the profitable raising and marketing of pigs than ours. Not only have we a sure market at Murray Bridge, but the district is well suited for growing such grain crops as are most suitable for fattening pigs. Of these, peas and barley are the best. Peas grown in this district this season yielded from six bags to eight bags per acre, and barley about the same quantity, but if the difference in price is taken into consideration, peas at 6s. per bushel and barley at 3s., it will be found more profitable to make barley the staple food, with a feed of peas two or three

times a week for a change of diet. In feeding barley to pigs being prepared for market, the most profitable way is to crush the grain and soak it in water for at least six hours before feeding. If skim milk is obtainable add it to the crushed barley and it will make one of the best of feeds. Pig raising, like all other industries, needs to be worked on right lines if it is to become profitable. This can best be done by breeding the stock on the farm, and, as in all classes of livestock, the sire is of great importance. For raising bacon pigs, a pure bred Berkshire boar should be secured and mated with sows capable of producing good litters of pigs. Do not select a pure bred sow unless stud stock is required, because, as a rule, the grade sow will prove more prolific. The Berkshire-Tamworth cross is considered by bacon curers to be the ideal bacon pig. Breeding sows should be allowed plenty of exercise and, except when suckling a litter of pigs, they should

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have the range of a small paddock, where green feed can be grown to provide them with food to keep them in good store condition until a week before farrowing time, when they should be housed in a good, comfortable sty and fed on slop food. Do not allow the brood sow to become too fat or trouble is likely to occur at farrowing time. The young pigs should be weaned at the age of seven weeks or eight weeks. When taken off the mother they should be fed on milk with a little crushed grain added. Feed little and often for the first week, otherwise the growth of the young pigs may receive a check. If it is desired to fatten them quickly feed liberally three times a day. The question of exercise for fattening pigs is one on which opinions differ. Good results may be obtained by allowing the pigs to run in a large yard or paddock if they are provided with good, warm sleeping quarters. Certainly there is one point in favor of this method. It requires less labor to keep them clean. I prefer to keep them in the sty, say, six pigs or eight pigs in each sty. Experience with this method has proved, in my case, that they will fatten quickly and more than repay for the extra labor involved, and should be ready for market at from six months to seven months old and turn the scale at about 120 lbs. dressed weight. Some feeders prefer to buy store pigs and fatten them instead of breeding. If this course is followed, do not select pigs less than three months or four months old unless plenty of milk is available. The pig that can be topped up with about two months' feeding will return a fair profit if the market remains steady, but, of course, there is always a chance of a drop in prices, and it is just here where I consider that the man who breeds has the advantage over the man who buys, because pigs at the present time can be reared to three months old on the farm for considerably less than their market value. Again, the man who starts out to buy in the open market generally has to buy his experience as well as his pigs. The experienced buyer will know at a glance whether the pigs offered for sale are likely to prove good 'doers' or otherwise. To those who are inexperienced in pigraising I would say always market the pigs in a finished condition. Many pens of good pigs are sacrificed in the markets because they needed just a little more feed. Never take them into the market with a full belly. The morning they are to be taken away do not feed at all. A drink of water if the weather is hot is all that is required."

GLOSSOP.

April 23rd.—Present: 35 members.

EFFICIENCY ON THE BLOCK.—Mr. Hatch read the following paper:—"The object of good management is to produce the maximum return of fruit, &c., and, at the same time, to keep the outlay down to a minimum and reduce unnecessary labor. A successful manager will be recognised by the appearance of his property, the general lay-out of the conveniences, and by the way in which he is regarded by the business people. Simply keeping the block clean and free from weeds, &c., is not alone evidence of good management. The problems that call for thought are—(1) The most successful treatment of the soil in regard to cultivation and manure; (2) the best method of pruning and training the vines; (3) the quickest and most economical method of harvesting the crops, at the same time preserving the highest quality of the product; (4) labor-saving devices and conveniences and the capital involved. One of the greatest problems is the soil, and there is no hard and fast rule for treatment, because the soil varies to such a degree that a method that would be successful in one class of soil would not do for others. For the greater portion of land in this area I regard as essential two ploughings yearly—winter and spring—with a third light summer ploughing if possible. A good subsoiling would be of immense benefit, but, as capital may not permit, the plough can be used as a substitute. In the absence of sufficient capital to procure gypsum, stable manure could be utilised on the worst portion of the block. Manuring to promote a good even growth and to produce heavy crops of good quality fruit is another question of individual soil requirements, but manuring is absolutely necessary. If the soil permits, I favor three or four cultivations as quickly as possible after an irrigation, followed by the harrows. If no rain falls, land treated in this way will be found quite moist at the next irrigation. If rain falls, the surface must again be broken. One fact stands out clearly, and that is that to protect the vines against burning it is necessary to cultivate more deeply. My observations of burnt vines show that this has been caused by a hard pan which

has not been broken, and which the water will not penetrate freely. It is advisable to have the ground in good condition before bedding, thus lessening risk of loss through a dry spell. In manuring, one must always bear in mind that with most manures the full results are not obtained until the following season, therefore a good even growth must be promoted. The quality of the fruit should be better the first season. Watering is one of the main problems in this area, and here again the variability of the soils has to be considered. Some soils take water slowly, others quickly, and it behoves the blocker to practise methods suitable to his conditions and see that every vine has been watered. Go where you will, and it will be found that the man who has watered well has good returns, provided he has not neglected to cultivate. Drainage will have to be effected sooner or later, and the sooner the better, therefore secure maximum returns to enable drains to be laid down. Individual observation and judgment play an important part in the pruning and framing the vines, and the blocker has to study the vines and the treatment of the soil. Harvesting the crop, especially in a year such as has just been experienced, is certainly a proposition. To the first place, the settlers had but little experience, insufficient rack space, very little hessian, and small capital to work on, and on top of that a bad drying season to contend with. The lesson has, perhaps, been dearly bought, but blockers will now realise that sufficient rack space, plenty of hessian, sweat boxes and tins, &c., are essential. It pays to get the crop off as quickly as possible—one ton of spoilt sultanas would just about pay for a rack in one season. In handling the crop at the rack quite a number of improvements may be noted, especially as to labor-saving devices. Capital again plays the major part in the control of general improvements, but as soon as possible water should be laid on to all portions of the block. A small workshop for tools, with bench and vice, is needed, and a rain-proof shed near the green, in which to store fruit, will be required. The stables and sheds should be conveniently situated, strongly built, and in a warm position, and the implements should be kept under cover and given an occasional coat of paint. The harness should be kept dry and in good order, and the horses should be well treated. A

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man that tolerates a horse with sores or allows the animal to remain in poor condition is a mean individual. With proper care an acre of lucerne should keep two horses for about nine months of the year. Try to see that every inch of the block is producing to its utmost, utilise everything possible, and try to use judgment, thought, and foresight."

MARAMA.

April 14th.—Present: nine members.

QUESTION BOX.—The meeting took the form of a "Question Box," when the following questions were discussed:—"What is the best early and the best late wheat to grow in this district?" Mr. W. Gray favored for early sowing, "Early Guyas" and for late seeding "Currawa." Mr. E. Tilly's choice was "Late Guyas" for the early variety, and for late "Currawa." Mr. G. Mills said that "Queen Fan" was the best early wheat, and "Marshall's No. 3" the best late. Mr. E. Greig said that "Guyas" was a good early variety, and that "Marshall's No. 3" or "Silver King" were excellent late varieties. "When is the best time to pickle wheat?" Mr. Greig preferred pickling wheat the night before sowing, and Mr. J. Churches said the main point to consider was to see that the wheat was dry before seeding. Mr. Tilly favored pickling one year before sowing, and sowing the same wheat dry the next year, because he thought much of the grain was killed through pickling every year. "What is the best variety of oats to grow for hay in this district?" Mr. Gray preferred Algerian and Scotch Grey. Mr. Mills favored Algerian. "What is the best method to rid land of lignum?" Mr. Gray said the only successful method was to keep sheep, so that the stock would eat the young lignum shoots when the plants appeared above the ground. "What is the best thing to do with a piece of stubble ground that was not burnt. It has carried two wheat crops, and is at present growing a lot of shoots. Would it be advisable to rake off the straw and fallow it, or cut the shoots and use the fire rake during next summer, and would it be safe to then sow wheat?" Mr. Tilly thought the best plan would be to cut the shoots so as to get an early burn next summer. Then summer fallow and sow with wheat. Mr. Mills said he would not like to risk wheat on such land, but would sow oats. Mr. Churches remarked that unless the burn was good, he would prefer to sow oats.

MONARTO SOUTH (Average annual rainfall, 14in. to 15in.).

March 22nd.—Present: 14 members.

DESTRUCTION OF MALLEE SHOOTS.—Mr. J. Harper read the following short paper:—"The best method of destroying mallee scrub is by continuous cropping until the shoots are destroyed. The first crop should be wheat, and if the stubble is not thick enough for a running fire, the fire rake should be used on very hot days to scour the shoots. The second crop should be oats, and about 1½ bush. to the acre sown in April should produce a stubble thick enough to account for most of the shoots. The land should then be fallowed and worked with a disc or skim plough and sown with wheat. If this practice is followed there will be no heavy losses from take-all. If the land is cropped with wheat three times in succession the crops were very liable to be attacked by take-all." In the discussion that ensued, one member said the running fire was better than the rake, but care should be taken that it travelled very slowly, it being only necessary to singe the shoots slightly, which was more effective than a quick burn.

MONARTO SOUTH (Average annual rainfall, 14in. to 15in.).

April 17th.—Present: 15 members and two visitors.

CARE OF SHEEP.—Mr. B. Schenscher read the following short paper:—"During the last few years the blowfly pest has been very troublesome. Much of this trouble has been due to neglect on the part of the owner, because if all carcasses were buried or burnt the flies would be kept under control and the death rate of the flocks would be decreased. Every farmer should crutch his sheep twice a year—the first time about March and the second just before shearing. Care should also be taken to see that the wool is removed from around the eyes of the sheep. Unless this is done the sheep are in danger of losing their sight, and will soon fall away in condition." The discussion that followed centred chiefly around the question,

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"Which is the best way to get rid of the blowfly?" One member said it would pay to burn or bury all sheep that died, and when destroying rabbits to do so with the fumigator. When sheep were blown, it was best to use benzine to kill the maggots. Others preferred Stockholm tar and kerosine. Others again said a weak solution of bluestone was most effective.

NEW RESIDENCE (Average annual rainfall 12.50in.).

April 16th.

OUTBUILDINGS ON THE FARM.—Mr. W. Schier contributed the following paper:—"Care should be taken when laying out farm outbuildings to erect them in a convenient position, say within 100yds. of the house. If possible, the sheds should always be built on ground where no water lies for any length of time. Some little space should be allowed between the stables and the implement sheds to act as a break in case of fire. When building the stables, care should be taken in selecting the posts. Do not use pine, on account of its susceptibility to dry rot. Jarrah or box wood will give the best results, and it is advisable to concrete them into the ground to prevent trouble from white ants. Straw roofs are not permanent, the stable should be covered with iron; the minimum height of the back and front of the roof should be not less than 12ft., so that the stables will not be too hot for the animals. A large yard adjoining the stables, and partitioned off into small yards, each yard holding two horses, should also be provided. The implement shed should also be covered with iron. Straw roofs, if allowed to get into a state of disrepair, allow the rain to leak on to the implements and vehicles. Both the stable and implement shed walls should be built of stone or concrete. The barn should be built of timber and iron to prevent trouble from mice and other vermin. To prevent mice getting in through the floor, the barn should be built about 3ft. above the ground. This can be done by building the barn on posts, and placing a piece of tin on the posts and nailing it down with the floor. The barn should measure at least 30ft. by 20ft., and be about 10ft. to 12ft. high. That will give plenty of room to provide for the storage of corn and other perishable produce. The pigsty and fowl shed should be built about 150yds. away from other sheds, on account of lice. If possible, they should be built on the opposite side of the house. The stables and pigsty should be situated south-east or north-east from the house, because the wind does not blow for any length of time from those directions in this district." In the discussion that followed, Mr. A. Kassulke favored a straw roof, on account of it being warm in the winter and cool in the summer, and if a good roof were put on, and the straw covered with netting, it would last for many years. Mr. Klitcher favored iron roofs for implement sheds, on account of their being fireproof. Messrs. Klaau, Tschirpig, and Foord also spoke.

PARILLA (Average annual rainfall, 16in. to 17in.).

February 15th.—Present: nine members.

SUMMER FALLOWING.—The Hon. Secretary (Mr. C. S. Foale) contributed the following paper:—"February or March is about the time to work the land for summer fallow. Shallow working only is required, and some farmers even advocate the use of the cultivator only, and, judging by results, the practice is justified. About 1in. deep is sufficient to break the surface to allow the first rains to soak into the soil and not run off the surface into pools and crab holes as it does on unbroken land. Usually this land will require no more working until after seeding, but it must be cultivated immediately seeding is finished, otherwise the weeds will have too firm a hold and will require the plough to turn them under. A much firmer tilth can be obtained on summer fallow than winter fallow, there are no clods to break up, therefore a better seed bed is obtained. Another advantage with this practice is that a farmer can get ahead with some of his work, because cultivating only is required after seeding, which means that much more land can be worked in the time that it takes to fallow it in the ordinary way, and the job will probably be finished sooner, thus giving the horses more rest. A few farmers in this district have been summer fallowing for several years and their results prove that it is good. One particular case I have heard of gave a crop of over 30bush. per acre. But the greatest point in favor of the practice is that it prevents

take all. It is worth doing, if for this alone. As time goes on and the advantages of summer fallow become more apparent I feel quite certain that it will become the general practice throughout the district."

PREPARATIONS FOR SOWING.—At a further meeting held on March 21st, Mr. J. A. Mann read the following paper:—"Fallow should be well worked soon after ploughing is finished. First the land should be harrowed and then all the stumps and bushes picked off to give the cultivator a clear run. I do not favor working the land more than 2in. deep for the first cultivation after the harrows. After that, the land can be worked shallower should any weeds appear after the first working. Early fallow is essential for success in wheatgrowing. At the approach of sowing time, say, about the middle of May, give the fallow a cultivation before sowing the seed, and, if possible, a stroke with the harrows after the cultivating, and after that start sowing seed, but cross the first working and then harrow it again after drilling. In order to obtain a good germination of seed, good, early fallow, well worked, kept free from weeds, loose on top, and well packed underneath to preserve all moisture in the subsoil is essential. Grass land should be ploughed with the first rains that fall after harvest and then harrowed. Then it should be left until the fallow is put in. So soon as the fallow is sown, work the combine or cultivator on the ploughed grass land. If the paddock is very grassy give it two strokes with the cultivator, the first stroke will make a good seed bed, and the second will make a perfect job of sowing the seed and also a clean sweep of all weeds that have been left behind the first working. Finally, work the harrows to finish the job. New land that has just been rolled and burnt should be cultivated without delay, and then allowed to remain in a rough condition until sowing time. New land should be sown a fortnight earlier than fallow, so that the grain can start with the first rains. I favor an early wheat on new land." The paper created a good discussion.

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RAMCO.

March 17th.—Present: seven members.

EXPERIMENTS WITH SULTANAS.—The following paper was read by Mr. W. Green:—"Having cultivated sultanas for many years, and the results not being what I consider above a fair yield, I am experimenting to increase the yield, if possible, by different treatment of canes over a period of three years. Although manures have been constantly applied to these sultanas there has been no noticeable increase in their bearing propensities, nor is it the water that is applied, for the grade of the land varies from 2in. to 15in. in the chain. This season I have made four 1-acre plots as experiments and comparisons. So far two have been harvested. The vines in No. 1 plot were pruned in the third week in June. On an average six canes were left to each vine. They were twisted tightly around the wires without the nodes being cracked. They were topped and disbudded on November 5th, and cinctured on November 13th. The yield was 758 buckets or an average of 58 buckets to the row of 30 vines. The vines on No. 2 plot were pruned during the first week in July, with an average of six canes to the vine also. The canes were all cracked at the nodes, were topped and disbudded on November 6th, and cinctured on November 14th. This plot yielded 886 buckets or an average of 68 buckets to the row, an increase of 128 buckets over No. 1 plot."

WYNARKA.

March 19th.—Present: 10 members and three visitors.

SHEEP ON THE FARM.—In an address on this subject, Mr. A. Hood said he advocated fencing the land before putting sheep on the farm, because otherwise much time would be lost in searching for them. Provided feed was plentiful, four wire fences would be sufficient for Merinos. Crossbreds needed a better fence, but he did not think they were the best proposition. He favored a good class of Merino, plain faced, and possessing a good frame which denoted constitution. He had received good results from aged ewes. If possible, ewes in lamb should be secured. They should be crutched about two weeks after the first rain, because the green feed induced scouring and the flies were more troublesome then. Lambs could be tailed at about eight weeks of age. During shearing operations precautions should be taken to keep the wool free from cocky chaff, &c., because its presence would probably make a difference of pence per lb. If old sheep were kept they should be provided with good feed because an ewe with a poor milk supply would not protect the lamb, and so it became an easier prey to foxes, &c. He mated his sheep in January and February to secure lambs in June. With Merino rams 2 per cent. was sufficient, but if breeding Crossbreds more would be required. Sheep could be kept for wool growing or for lamb raising, and he favored the former because there was less work. One should take care to prevent overstocking. One sheep to 3 acres was sufficient, although limestone country that had been cleared some years might carry more. Water should be always available. The troughs should not be too large because the water would then not be so liable to become stale. He favored tailing short, and considered the best grasses in that district were spear and barley grass.

BARMERA, May 6th.—The Deputy Horticultural Instructor and Manager of the Berri Orchard (Mr. C. G. Savage) attended the meeting and delivered an address, "Pruning."

BERRI, April 23rd.—Mr. R. H. F. Melndoe, B.V.Sc., M.R.C.V.S. (officer of the Stock and Brands Department), attended the meeting and delivered an address, "Prevalent Complaints of Horses and Cattle." The final report of the Peter Wood Cup competition was also presented, which showed that Mr. W. M. Gillard was the winner with 95 points, and Messrs. Thomas Halliday & Son second with 87 points.

COOMANDOOK. April 23rd.—Nine members and three visitors attended the April meeting, when the report of the Nunkeri and Yurgo experimental plots was read and discussed. An interesting talk also took place on the subject, "Sub terranean Clover."

DOONALPYN, April 17th.—A short address, "Experiences with the Tractor," was given by Mr. O. George. The speaker stated that sand seemed to be an obstacle to the machine, but it was able to negotiate the light soils with suitable grips. These, however, did not give the tractor the best power in hard soil. On the other hand, the tractor was faster than horses and enabled the implements to work closer to the fences.

GERANIUM, March 7th.—Mr. R. C. Scott (Experimentalist of the Roseworthy Agricultural College) delivered an address, "Cereal Culture," to an audience of 28 members and visitors.

LAMEROO, March 22nd.—Mr. C. R. Elme contributed a paper "Sand Drift." A keen discussion followed. It was thought advisable to remove all bushes, &c., that were growing against fences so that the sand would not collect and bury the wires.

MURRAY BRIDGE, February 18th.—Twenty members and a number of visitors attended the February meeting, when Mr. R. Corkburn delivered an address "Top Dressing Pastures."

MYPOLONGA, April 14th.—Mr. L. Rankine (Stock Inspector) delivered an address, "Tuberousis and Meat Inspection." Seventeen members and six visitors attended the meeting.

NETHERTON, April 11th.—Several items of timely interest, including seed wheat, drilling, and working fallow land were brought before the meeting, and an interesting discussion ensued.

RAMCO, February 18th.—Mr. F. G. Rogers gave a short address "Observations during a Trip to the City." Referring to the matter of trellis posts, Mr. Rogers stated that he had seen the following plan put into operation: With a post borer a 6in. hole was dug and filled with cement reinforced at the top, and into this was put a 1in. x $\frac{1}{2}$ in. angle iron dropper. A piece of galvanized iron was then obtained and bent to form a frame. This was filled and the droppers placed in position, and when the mixture had set the frame could be taken away. The initial cost would possibly be greater on the river, but such posts would be everlasting. Cement was used in the proportion of 1 in 6, and very fine chippings from the quarries were necessary.

SOUTH AND HILLS DISTRICT.

BLACKHEATH.

April 19th.—Present: 10 members and visitors.

SEEDING OPERATIONS.—Mr. H. Paech contributed the following paper: "For at least three weeks before the commencement of seeding preparations, the horses should be stable fed at nights, well groomed in the mornings, and then, if not required, turned out during the day. Especially should this be done in districts where the horses are likely to pick up sand. During the time the horses are being prepared, all machinery required for seeding should be thoroughly overhauled, all worn parts replaced, accumulated dust and oil scraped or wiped off, and all bearings requiring it lubricated with oil and kerosene to loosen all gummed oil from the previous season. All wooden swings should consist of straight-grained stringybark or sheoak, and D bolts used instead of eye bolts. All harness should be repaired and collars lined and well stuffed. The seed should be well cleaned and graded. This will assure an even sowing of the seed. Pickling plays an important part in the success of the crop, and whatever method of treating the grain is adopted, it is essential that the work be done thoroughly. After the weeds are up, the fallow should again be worked with the scrip harrows, or a spring tooth cultivator, and then drilled with 1bush. or $1\frac{1}{2}$ bush. of wheat, according to the variety sown. Early varieties require a thicker sowing than late varieties, say, about 1bush. to the acre and about 90lbs. to 100lbs. of 45 per cent super. Finally, the fallow should be harrowed, all stiff ground well ploughed to a depth of 4in. or 5in., and then harrowed before and after the drill. It is better to put in less ground thoroughly than a large area carelessly. The land

should be grazed for about 3 or 4 years in between crops of wheat. When the wheat and oats have covered the ground and the soil is in a moist condition, the area required for hay should then be rolled. If, during seeding operations, the horses are troubled with sore shoulders, apply medicated oil and double a clean bran bag and place it around the shoulders underneath the collar. When seeding is finished, all machinery should be placed under cover."

CYGNET RIVER.

April 15th.

POTATO GROWING.—The following paper was read by Mr. W. J. May:—To secure heavy crops of potatoes it is necessary to obtain good seed. Each grower should select the seed at digging time from the tubers which have given the largest returns. All unshapely potatoes should be rejected. When cutting it is necessary first to remove the cluster of small eyes, which is usually found on one end of the tuber. The sett, when cut, should have, at the most, three eyes. After it is cut the seed should be sprinkled with wood ashes to stop bleeding, and, if necessary, it may then remain for a day or two before being planted. The ground should be well worked before the potatoes are planted. The setts should be spaced about 15in. apart in the row, one row of seed being placed in every fourth furrow, to allow for ample room for the horse cultivator to be worked. When the plants are about 6in. high the harrows should be run over the plot to check the growth of weeds. A dressing of stable manure and a light application of mineral super give satisfactory results. Planting earlier than September is undesirable unless the situation is free from frosts. When the plants are about two-thirds grown they should be earthed up. This will assist in keeping the potatoes free from wire worms, and will also keep them from exposure to the sun. The most popular varieties are 'Carmens,' and 'Up-to-Date'; 'Snowflake' is a heavy cropper, and 'Red Skins' give a good return, but the tubers are not so large as some of the other varieties."

KANGARILLA,

March 21st.—Present: 13 members and visitors.

QUESTION BOX.—The meeting took the form of a "Question Box." The first question to be considered was, "What ointment is most suitable for a cow with sore teats?" Vaseline was recommended to keep the teats soft and so cause them to heal quickly. One member said an application of bi-carbonate of soda would give good results if a teat were cut. In the case of very sore teats, the speaker advised drying off the quarter and then working it back when the sore had healed. "What will remove warts from a cow's teats?" Castor oil was mentioned by one member as having the desired effect. "What is the difference between a Pomery and Cleopatra apple?" Some members stated that there was no difference, whilst others considered that they were two distinct apples. Mr. Biddle said that the Pomery apples growing in his garden, planted many years ago, were a different type from the present-day Cleopatra. "Which is the most suitable system of drainage on swampy land?" The majority of members preferred underground to surface drains. The former improved the soil, whilst the latter were an obstacle to working the land.

LONGWOOD (Average annual rainfall, 37in. to 38in.).

February 28th.

Captain S. A. White, C.M.B.O.U. (Vice-Chairman of the Advisory Board of Agriculture) attended the meeting and delivered an address, illustrated with lantern views, "Across Australia by Motor Car."

POTATO GROWING EXPERIMENTS.—Messrs. Lewis and Woolecock tendered a report upon an experiment in potato growing conducted by them on behalf of the Branch to ascertain which of the nine varieties tested were the best for the district. The seed was presented by Mr. Joseph Johnson, and the sets were all planted on October 5th, 1923. They received the usual treatment which is given

to potatoes grown by members at this period of the year. Stable manure was dug in prior to planting the seed. The growing period was very favorable. Rain came at intervals, which was quite beneficial in producing good returns.

MR. R. H. A. LEWIS.

	Sets.	Yield.	
		Lbs.	Ozs.
Connor's Up-to-Date	38	103	11
Factor	35	95	—
Early Manistee	25	53	64
Scottish Triumph	34	67	12
Carmen No. 1	33	61	8
Brownell	19	27	—
Delaware	19	19	8
Bismarck	35	54	—
Commonwealth	23	67	—
	263	548	134

MR. WOOLCOCK.

	Sets.	Yield.	
		Lbs.	Ozs.
Connor's Up-to-Date	40	102	8
Factor	40	93	—
Early Manistee	38	69	—
Scottish Triumph	38	93	8
Carmen No. 1	40	65	—
Brownell	30	39	8
Delaware	36	34	8
Bismarck	32	88	8
Commonwealth	36	92	—
	330	677	8

The total area of land was about $1\frac{1}{2}$ rods. All the labor was performed with hand tools. Mr. Lewis said some of the shoots were more developed than others on the day they were planted which probably had some influence upon the yield. "Up-to-Date," "Factor," "Scottish Triumph," and "Carmen" proved best for this district. Cooking tests were conducted by Mrs. Higgins and "Up-to-Date," "Manistee," "Scottish Triumph," and "Carmen No. 1" were highly spoken of.

At a meeting held at the homestead of Mr. W. H. Hughes on April 12th, the meeting discussed the results of the recent potato growing experiments.

MC LAREN FLAT.

April 15th.—Present: 52 members and two visitors.

Mr. Liddiard read a paper "Pruning."

POULTRY FOODS AND FEEDING.—At a recent meeting the following paper was read by Mr. E. Butler:—"In dealing with this subject, I intend touching upon the most important branch of the poultry breeder's work. Given good stock, proper housing, and an up-to-date plant, success will not be attained by improper feeding, hence it is most important that the breeder should understand and master the correct feeding of the flock. It has been proved that the best foods are the cheapest, and many of the so-called cheap foods for fowls are at times not worth using. Grain or mill products that have been damaged to any extent has no feeding value. The aim of the feeder should be to use the foods that give a proper proportion of protein, fats, and carbohydrates. No two foods are alike in feeding value, so that it is necessary to mix foods to obtain a balanced ration. Protein is the name applied to substances containing nitrogen. This food constituent is necessary in all rations, because it assists in the formation of lean meat, blood, skin, and eggs. Carbohydrates is a term applied to a class of nutrients composed largely of starches and sugars. They furnish energy for the body, or are converted into fats and stored for future use. Fats, as the word denotes, include the oily portions of foods and perform much the same function

as carbo-hydrates. A balanced ration is a feed containing the proper proportions of protein, fats, and carbo-hydrates. Wheat.—The value of this grain is well known. It is important in feeding for egg production. Oats is a good food, but its value depends upon the quality of the grain and the amount of hull and fibre. Barley differs from wheat in that it has a hard, fibrous sheath around the kernel. For egg production it is not to be recommended, but it may be used for fattening purposes. Maize is a good food in cold weather, and may be used to advantage when cracked and mixed with other grain. Peas, like maize, make a good winter feed. Mill Products.—Bran and pollard are the stable products used in feeding, and vary in quality. A good sample of bran is flaky, and I favor a fine, white pollard for feeding purposes. Meat in some form is necessary, and specially prepared meat meals are always procurable. Green feed is a necessity, and any tender and succulent greens may be fed in season. Feeding for Egg Production.—This has been brought to a fine art, and different systems have been introduced into the poultry world. There are three methods of feeding mostly used by various breeders at the present time. No. 1. Morning, mash; mid-day, green feed; evening, grain. No. 2. Grain in the morning, green feed at mid-day, and mash at night. No. 3. Dry mash, with green feed and grain at mid-day and night respectively. These systems of feeding can apply to a person with a few head of poultry, or to a man who numbers his flock by the thousands, but whatever system is adopted it should be adhered to right from the start. A sudden change in feeding will probably cause a diminished egg yield, and at certain times of the year a moult may be the result. The system adopted by most of the breeders in South Australia is No. 1. The bulk of the work is done in the morning, that is, mixing and distributing the mash. The green feed at mid-day is quickly distributed, and the work at night—feeding the grain—can be quickly done. No. 2. Feeding grain in the morning and mash at night is favored by a very few breeders; the morning work is very light, and most of the time is taken up in the afternoon preparing and feeding the mash. No. 3. No morning work is required, because the dry mash is placed in specially constructed hoppers for the birds to get at will, and only mid-day and evening meals have to be fed. There are perhaps certain features in one of these systems that will appeal to the poultry-keeper, whether on a small or large scale, and a comparison will be beneficial. The birds are off their perches at daylight, busily engaged in scratching amongst the litter for any grain that may be left from the previous evening's meal. They have empty crops, and are eager for their morning feed, and when the mash is placed before them, they will be anxious for it. The mash, being hot, will give the birds a good start for the day, especially in the cold, winter months. This is quickly digested and in a few hours the soft food has passed from the crop into the body, and they are ready for the mid-day green feed. This is also quickly digested, and by feeding the grain at night, the birds take some time to find the grain in the litter, having to work for it, and go on to the perches warm with the exercise and having full crops. Grain takes longer to digest than soft food, and as it passes into the gizzard the juices and grit grind and soften it. With No. 2 system the wheat may be raked in after the birds have gone to roost, and as soon as daylight comes they can get their first meal. The mash at night is fed, and advocates of this system say that a higher egg production can be had, because the birds receive all that they can eat. No. 3. Dry mash. Here, there is no labor attached to mixing food every morning. So soon as the birds can see they are at the troughs picking at the mash. This, to many of the breeders who have other work on hand, is a great saving of time, because enough dry mash can be mixed at one time to last the birds for a week. They also state that more birds can be managed by one man under this system, but for egg production average results are not equal to the wet mash. There is also a grave danger of the flock becoming fat, as well as a certain amount of waste of food, caused by the birds picking out the tit-bits. A mash consists of bran, pollard, green feed and meat meal. In making the mash, place the green feed in a trough and put on the bran, then pour boiling soup over it, mix it up well, and dry off with pollard. This, when mixed, should be crumbly, not too wet or too dry, because the birds will not eat it readily if it is on the dry side. In the feeding of a flock one has many classes of birds, and where one pen of, say, 100 birds will stand a highly concentrated mash, another pen may not need one so forcing, and care must be taken not to injure the hens by expecting too much from them. The quantity of mash fed cannot be laid down by any hard and fast rule. When the

birds are laying well they need a full supply, and will at times vary in the quantity they eat, but if a pen of birds is visited about 20 minutes after feeding the breeder can soon see by the state of the troughs whether more mash is needed, or whether too much has been fed. If more is needed it should be given, but care must be taken not to over feed. The quantity of grain to be fed to each bird is often a matter of discussion, and some have fed as much as 2oz. This is a point that the poultry breeder must find out for himself, but I favor 1½oz. If too much wheat is fed at night there is some left for the morning and that means that the mash is not readily consumed. After the birds have perched for the night an examination of the litter will put the feeder right as to whether he has over fed, and if this proves to be the case the quantity should be reduced. The dangers of under feeding, perhaps through inexperience, are great. The birds are not getting the necessary food to keep up bodily strength, and have no food to convert into eggs, and with over feeding the organs cannot perform their duties properly when coated with fat, and it is only by close attention to the small details of feeding can the poultry-keeper hope to make poultry keep him."

MILANG.

January 12th.—Present: 20 members.

MOST PROFITABLE SHEEP FOR THE FARMER.—Mr. E. J. McLean read the following paper:—"Generally speaking, for a wet, cold district, the crossbred and Comeback are the most suitable sheep, while for the drier and warmer districts the Merino sheep is favored. In the first place, the sheepfarmer has to decide if he will produce wool, or direct his attention to raising wool and fat lambs. Breeding fat lambs for local or export markets is one of the most profitable branches of sheep farming. Much might be said in favor of the Merino ewe for this purpose, such as being easy to control inside the fence, cutting a good fleece, &c., but the crossbred and Comeback ewe makes the better mother, and the lambs of that cross are more vigorous and sturdy than the pure-bred Merinos. The majority of

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lambs exported are crossbreds, the most popular crosses being the Dorset Horn, Leicester, and Shropshire. These crosses mature more quickly than the Merino, and are, therefore, able to be placed on the early markets. The Dorset Horn mated with a Lincoln-Merino crossbred ewe or a close-wooled Comeback ewe is the best type for this district. A Comeback sheep is the progeny of a Merino ram mated with a crossbred ewe, that has an infusion of Merino blood. These ewes cut a very profitable fleece of wool, and the lambs are worth from 3s. to 5s. per head more at a certain age than lambs from Merino ewes mated to the same breed of rams. This is very important in a normal season, because the price of lambs often drops in the latter part of the season, while this year late lambs have brought higher prices than earlier ones. There are two reasons for this, one being the splendid late season for grass, enabling the farmer to finish the lambs off in very prime condition; and secondly, because of the excellent demand locally, and for export, which exists through a falling off in surplus due to the severity of the weather early in the winter. The light weight lambs of from 32lbs. to 35lbs. or 40lbs., are chiefly in demand. In all markets light lambs in good condition will always bring a better price per lb. than heavier ones. To produce good lambs for export, a farmer must not overstock, because ewes and lambs require an abundance of feed and good water. Lambs should not be dropped before May 1st, because of the uncertain rainfall, and once a lamb receives a check it never thrives. Lambs born early in May under favorable conditions will be fit for market by the middle of August, or a little later. For the man on the land who is prepared to give careful attention to the requirements of sheep, there is no other branch of farming to give such good returns with such a small yearly cost in management." Mr. McLean then gave an interesting description of the position of markets, and explained many of the technical terms used in the appraisement of the fleece.

MIXED FARMING.—At a further meeting, held on March 8th, the following paper was contributed by Mr. H. Pearson:—"The present and prospective price for wheat makes it clear that it is absolutely necessary that farming operations should not be confined to any one branch of agriculture if success is to be obtained. The first factors to be considered are the nature of the land and the rainfall. If starting on a new block, the laying out and subdivision of same is of the most importance. The homestead and farm buildings should be as near the centre of the holding as possible, with a race half a chain wide running right through the property, and with all paddocks opening into the race, to facilitate shifting the stock to the yards or from one paddock to the other. The size of the paddocks is another point of great importance. I think 100 acres should be the limit, and to those who are able, I advise having them half that size, with several small paddocks near the homestead for calves, pigs, &c., and, if possible, have water in every paddock. If the above plan can be adopted, a line of pipe laid down the race will meet all requirements. This system would apply to either a large or a small farm. Of course, in dealing with an improved farm, consideration must be given to existing conditions. Whilst I favor mixed farming, I recognize it is possible to adopt too many side lines. Consequently it is advisable to confine operations to a few of the staple industries that experience has proved to be suitable and profitable in the district. In this locality oats and barley should predominate, with a small area under wheat, and with a few small paddocks of rye or oats and barley mixed for early grazing. Mangolds is another crop worth trying, for given favorable conditions, I know of no other crop that will yield the same weight per acre. It should not be supposed, however, that a profitable crop will be grown without thorough cultivation and working into the land a very heavy coat of farmyard manure during the winter and early spring and then applying about 3ewts. super. Sow the seed with the drill, but not with the super, that must be sown previously. The rows should be about 2ft. apart and kept well cultivated with a Planet Jr., and gradually thinned out as the plants develop, ultimately leaving them 12in. to 15in. apart. The thinnings make almost a crop in themselves, and are splendid feed for either cows or pigs, but they must be fed with dry feed, as they are very laxative. Another advantage is, if not needed for immediate use, they can be stacked until next year and still retain their nutritive qualities. A crop of mangolds averaging 8lbs. and set out 2ft. by 1ft. will yield 80 tons per acre. If dairying is contemplated, I

recommend growing a mixed crop of wheat, oats, and barley, or any mixture suitable for ensilage, which can be made in a stack if a silo is not available. Chaffed oat hay and ensilage make an ideal feed for cows, and the addition of crushed oats and bran will add to the value of the fodder. Sheep should be kept, if only to supply meat for the home, but if kept in large numbers they should follow the cows from one paddock to another. Pigs are a very profitable medium for converting corn, milk, and other products of the farm into cash, and whilst it is not probable that the present high prices will be permanent, a drop in prices can be experienced, and yet allow the farmer to feed barley at a profit. Good sties, proper forage, and good breeding stock, however, are indispensable to success. A vegetable garden is also worthy of consideration if a suitable site can be obtained. Good poultry are also worth keeping, but they should not be allowed to have the run of the horse mangers and roost on the implements."

MOUNT PLEASANT (Average annual rainfall 26.87m.).

April 11th.—Present: seven members.

Mr. V. R. Tapscott read a paper, "Modern Methods on the Farm," and a discussion followed in which Mr. E. J. Tapscott strongly favored the Jersey cow as compared with the Shorthorn. He said that although with the Jersey one would not have so much skim milk for feeding pigs, it would be found that the lactation period of the Shorthorn was considerably shorter than the Jersey, and that the Shorthorn required more feed than the Jersey. Mr. V. R. Tapscott considered that any cow of a dairy breed, if properly fed, would prove profitable. The question of in-breeding was also dealt with by Mr. V. R. Tapscott. Mr. V. R. Tapscott tabled a plant which he said was a cross between turnip red beet and silver beet. He said that it was good for feeding cattle and could also be used for the table, both as red beet and as silver beet. Mr. Tapscott also showed samples of Blue Wonder beans, a new variety. Mr. E. J. Tapscott asked whether super could be used with advantage when growing cabbages, &c. The general opinion was that super should not be used during hot, dry weather, but would give good results when the weather was cool and damp.

RAPID BAY.

April 12th.—Present: 25 members.

DESTRUCTION OF FOXES.—Mr. L. Morris read the following paper:—"Foxes are becoming more numerous every year, and every year more difficult to poison. In this district there are three ways of destroying these pests—poisoning, catching with dogs and shooting, and trapping. Of these I favor poisoning. Farmers who lay poison and do not trouble about the skins should commence to set baits in February, because the young foxes are big enough to travel and are more readily poisoned than later in the season. The main points in poisoning are to have a good trail and suitable baits. For a trail the large stomach of the sheep is the best I have tried, and for baits raw rabbit or rascilla parrots and mice have given good results. It is also a good plan to place baits in a stubble paddock that the foxes have been in the habit of visiting in search of food. It is not advisable to poison the whole carcass of a sheep, because the bones are dangerous to stuck as well as dogs. Just as good a result will be obtained, if a sheep is killed by foxes, by cutting off small pieces of meat, care being taken not to handle the baits, and burying them within a few yards of the sheep. The smaller the bait the more likely the fox is to eat it. Always bury the baits so that they are not taken by birds. For poisoning I have always used crystal strichnine with good results, but now that foxes are becoming more difficult to poison I suggest the use of cyanide of potassium; because after baits treated with it have been out in the paddock for two or three days they become harmless and dogs can be taken where the baits are laid with perfect safety. Many farmers object to dogs being taken on their land in lambing time, but I think good dogs would kill more foxes than would pay for the lambs that were lost. About June and July, when the foxes are mating, it is almost impossible to poison them, and that is the time when dogs are the best means of destruction, for the foxes, as a rule, travel during the day and night. If by any means a vixen can be poisoned during mating season, it is a good plan to put down a fresh bait in the same place, for as foxes travel in pairs, the dog is almost certain to come back in search of its mate. As a rule

after mating season is over, foxes can be poisoned easily for a few weeks until the vixens disappear to be seen no more for several months. Trapping foxes is not favored in this district, but if care and patience are exercised quite a number of foxes can be destroyed. The first thing to do is to find a place suited for the purpose, a forked log or a hollow stump, with an opening on one side so that the bait, unpoisoned, of course, can be buried where it can be only approached from one way; the traps should be buried deeply and set in wet weather for the best results to be obtained. A trap which is set for a fox should never be pinned securely, but should be wired to an old plough share or something that will give when the fox pulls, otherwise it will pull off its foot and escape. I favor the ordinary rabbit trap in preference to the fox or dog trap for the reason that the former are not so clumsy to set nor so much trouble to cover. It is always a good plan to take the carcass of the fox, if it has been poisoned or trapped, away so that it cannot be seen or smelled by other foxes. Referring again to poisoning, there are other baits which can be used under different circumstances. For instance, foxes eat fruit and can be poisoned in an old garden, but care should be taken that no stock can get in to pick up the fruit which falls to the ground. The orchard should be visited in the evening and all pieces of fruit on the ground picked up, except two or three which can be poisoned, care being taken to mark the poisoned fruit so that it will be known if more fruit falls and is not taken. Cream if set on a fine night where a young lamb has been killed is almost sure to poison the fox which killed the animal. Take the dead lamb away and set the cream in the same place." In the discussion that followed, a visitor asked if anyone had tried poisoning the traps, and he explained that it had been found very successful in the North. The method was to tie a strip of rag around the jaws of the trap and insert strychnine in the rag and when the fox got caught it would bite at the trap and get strychnine from the rag.

ROCKWOOD.

March 17th.—Present: nine members.

THE FARM GARDEN.—Mr. L. Neighbour read the following paper:—"The farm garden should be conveniently situated close to the homestead, and, if possible, should have a water supply for summer use. A well drained piece of ground is necessary in this district owing to the heavy winter rainfall, and for this reason I do not think summer vegetables could be grown very successfully without irrigation. During the time prior to seeding, the manure from the stables, cowyards, and fowl runs could be carted on to the garden and ploughed in ready for planting with the first rains. The manure should be well rotted to avoid weeds, and should be spread to a depth of at least 3in. It is a good plan to manure half of the garden heavily each year, using that portion for cabbage, cauliflowers, lettuce, and other plants requiring heavy feeding. The remaining portion could be dressed with superphosphate at the rate of about 5cwt. per acre. Turnips, red beet, carrots, and parsnips could be planted in this part of the garden, but in the case of carrots and parsnips, the super should be well worked into the soil some weeks before planting to avoid mis-shapen root crops. Seed of cabbages, cauliflowers, lettuce, &c., for transplanting should be sown thinly in fairly rich soil, but should not be forced. A well grown, sturdy plant will not feel the shifting nearly so much as a spindly plant. When transplanting, holes should be made for the plants and filled with water unless the soil is very damp. This will be found to answer better than watering after the plants are put in. The hoe should be kept going whether weeds make their appearance or not, because a well worked surface helps to keep the plant healthy. When the plants commence to turn in they will benefit by a top dressing with a mixture of super, five parts; blood manure, three parts; sulphate of potash, two parts, applied at the rate of 4ozs. or 5ozs. to the square yard. This should be hoed in and will act quickly when the soil is in a nice moist condition. Cabbage moth and aphids may be found troublesome during the summer and early autumn. These can be checked to a certain extent by destroying or removing all decaying leaves of cabbages which have been cut. If these leaves are left to rot on the stump they will form breeding grounds for the pests. All vacant ground should be dug over and left rough if not required for immediate use. It is a mistake to allow weeds to overrun any portion of the garden, because the seeds of some of the noxious plants will retain

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their germinating powers for many years and cause endless toil, which may be prevented if they are taken in time. Carrots, parsnips, turnips, swedes, red beet, onions, &c., should be planted in rows about 1ft. apart and the seed sown thinly. When the rows can be seen the Dutch hoe should be run between them, and as soon as the plants are large enough to handle, they should be hand weeded and thinned out. Plenty of space should be given if good results are desired. Three inches is sufficient for carrots; 4in. for turnips, red beet, and onions; 4in. to 6in. for parsnip, and 6in. to 8in. for swedes. Grown in this way the plants may generally be pulled as they come without searching for the best, because when they are grown thickly they will grow more quickly, and the ground may be ready for the next crop a week or so earlier, which is often very important. Potatoes, onions, and any of the melon tribe will follow well on the heavily manured portion of the garden, but should have a dressing of super as well. To get the best results from pumpkins, cucumbers, and other members of that family, the ground should be deeply trenched. Throw off the top soil to a spade depth and dig a good quantity of manure into the next spit, afterwards returning the top soil, well mixed with manure. On the artificially manured portion, French beans, peas, and tomatoes should follow. For tomatoes, I use a pound or two of well rotted farmyard manure to each plant, afterwards top dressing with the mixture recommended for cabbages. If the plants are growing well, the top dressing should not be applied until the fruit has set. A second dressing may be applied later if necessary. Tomatoes may be pruned to a single stem by pinching out the laterals as they appear; the plants will require tying to stakes if this method is adopted. This method encourages the early formation of fruit and more plants can be grown on the ground. Three feet between the rows and 2ft. between plants is sufficient for staked tomatoes and 4ft. by 3ft. will be required for the bush method. French beans require a fair quantity of manure. Good results will be obtained by covering the seed with a couple of inches of well rotted farmyard manure and giving also a sprinkling of super. The beans will crop for several weeks if picked frequently and well irrigated once a week. Peas do well with less irrigation than most summer vegetables, and should be well drained if grown in winter. Manuring the rows as with French beans is also beneficial to peas. Thorough cultivation, both before and after planting, is essential if good results are desired in the garden, so that all vegetables should be planted with sufficient space between the rows to allow for cultivation until they are well grown. Constant attention is required to keep the garden in order. Weeds should never be allowed to grow, but should be prevented by constantly stirring the surface soil, thus killing them as they germinate. Finally, for the farmer who desires remunerative recreation, there is nothing better than the farm garden."

SHOAL BAY.

March 31st.—Present: 12 members and two visitors.

COLT BREAKING.—Mr. K. Bates, who read a paper dealing with this subject, said the first thing that was necessary for colt breaking was a strong yard, and next sound gear. A rope and pole were necessary to catch the colt and bring it up to a secure post. Next a leather halter should be placed on the colt and the bit inserted in its mouth. On no account should winkers be placed on the colt whilst it was being handled. Then a rope could be fixed to the bit and a surcingle buckled on tightly, tying each end of the ropes on each side of the bit to the surcingle sufficiently tightly to arch the neck. That tackle could be left on for the best part of the day, and the colt would gradually mouth itself. The second day the colt should be caught. Special care should be taken to see that it did not break away. After proper fitting harness had been chosen, the colt should be put in a hand roller to teach it to walk straight. After that the colt should be ready for the body of the team. Care should be taken not to overwork the young horse for the first few days, because if that were done it would make a slow and sluggish horse. After working the shoulders should be washed with salt water to harden the skin and minimise the danger of sore shoulders. A wet bran bag put under the collar also prevented the shoulders from scalding.

SHOAL BAY.

April 17th.—Present: 17 members and one visitor.

FENCES ON THE FARM.—Mr. S. Bell, who read a paper dealing with this subject, said if the fences on the holding were not kept in good order the farmer could expect trouble with his own and neighbouring stock. The boundary fence should be made of good gum posts, 2ft. in the ground and 3ft. 9in. high with six plain No. 8 wires and barb on top. Good stockyards were necessary part of the farm equipment. The horseyard should be built of gum posts and rails. The posts should be 2ft. 6in. in the ground and 4ft. 6in. above the surface, with two rails, one on the top of the other 2ft. 6in. off the ground. There should be one plain wire between the rails and one underneath. The sheepyards could be made of gum posts, pig netting, and four No. 8 plain wires, to which the netting could be tied, and a barb wire on the top of the post. The fence should be at least 4ft. high and the posts 2ft. in the ground. The gates should be made of sawn stringybark swung on good hinges and fastened with an iron hook so that it could be opened and shut easily.

TWEEDVALE.

March 20th.—Present: 15 members and three visitors.

ENSLAGE.—Mr. E. S. Miller contributed the following paper on this subject: "It is surprising to note that, although the first silo to be built in the Commonwealth was erected in South Australia, the farmers in this State are far behind those of Victoria and New South Wales in realising the importance of the silo as a means of conserving fodder. Ensilage making has now passed the experimental stage, and many farmers in all parts of the world rely almost entirely on ensilage fodder in times of drought. It stands alone as an insurance against drought, and in a district like this where we have feed in abundance for a few months of the year and then practically nothing for the remainder, I think no dairyman can afford to be without a silo. It supplies fodder that is most needed in the late summer and autumn, when a moist, juicy food is required to stimulate the milk flow of the cows. Compared with roots its feeding value is great, as the following table will show:—Mangolds (which are considered the most valuable fodder we have in the Tweedvale district), contain 88 per cent. of moisture, whereas lucerne and rye grass contain 58 per cent; fibre shows under 1 per cent. in mangolds against 13½ per cent. in silage; albuminoids, 1 per cent. against 6 per cent.; fats, 1/10 per cent. against over 2 per cent.; ash, less than 1 per cent. against 5 per cent.; carbohydrates (sugar and starches) shows 15.20 against 9.40; the digestible food in mangolds shows 10.59 against 23.33 in ensilage. Every particle of herbage upon farms may, if necessary, be utilised for silage, even weeds, thistles, and nettles having been successfully employed. The leaves and shoots of many kinds of trees may also be ensilaged. If the material is too coarse for actual silage, it may be useful for topping up the sides, stacks, or clumps. Coarse grass in meadows, pastures, and under trees in orchards and elsewhere, which stock frequently reject, may be made into silage. Sudan grass, lucerne and clover, hop-vines, vetches, Italian rye grass, maize, sorghum, and such like fodder, all cereals, especially if mixed with leguminous fodder such as lucerne, beans, &c., make excellent silage, but the best crop is reaped from a sowing of 2 bush. of oats, 8 lbs. of vetches, and 20 lbs. of peas to the acre. Leguminous fodder should always be mixed with cereals. In America, where there are over 400,000 silos with an average capacity of nearly 80 tons, the most important silage crop is maize, which is roughly chaffed and in some instances employed moist. I wish to especially emphasise the fact that, although cows ravenously eat silage which is made from thistles, weeds, and such like material, it must be remembered that the better the fodder put in the better will be the return. Ensilage is the name given to green, succulent vegetation conserved either in pits or in overground silos under conditions which do not permit the air to penetrate the bulk of the material, in fact, the success of the process depends upon the expulsion of air from the mass. When we put green stuff into a heap we find that in a short time there is a considerable rise in temperature due to biological and chemical changes in the plant cells. The work of rendering the green stuff more easily digestible is carried on by ferment and bacteria, which are present in countless numbers on the plants. A few days after the stuff is put into a silo a pleasant aroma will be

noticed. This is due to the formation of lactic and acetic acid, and unless the action of these acids is properly controlled by the expulsion of air from the mass, the result will be failure. Anyone, however, can make good ensilage if sufficient care is exercised. Palatability and succulence in the food ration are essential to deep milk yields, health of the cattle, and success in stockraising, but in few countries is dairying so subject to hot and dry conditions during the summer months, as in South Australia, nor so short of food supply during the cold weather, especially in our hills district. Ensilage making should, therefore, appeal to all. Succulence and palatability supplied to milch cows in England in the shape of root crops cannot so readily be secured in this State, therefore we must have recourse to other methods, and the only one which will be successful all the year round is properly managed ensilage. I feel almost convinced that lack of succulence in the feed is responsible for that common and dreadful complaint which carries off so many of our dairy cows, and is known as "dry hib," impaction, or paralysis. For green crops ensilage has many indisputable advantages over hay, the chief being immunity from fire and vermin of any description. It will keep indefinitely without any depreciation in value, and is always ready for immediate use. It is a far more valuable fodder for milking cows than hay because it has a favorable influence on the milk cow. The crop intended for ensilage is more easily secured than the hay crop, because it can be cut and carted straight into the silo in any sort of weather, whereas with hay there is the worry of getting suitable weather for cutting, stocking, carting, and stacking. In order to obtain the maximum food value in any crop grown for silage, the crop must be cut when it contains roughly 75 per cent. of moisture. Where cereals are grown with leguminous plants it is well to cut the crop with a reaper and binder and put it through a chaffcutter into a pit. It is a good plan to sprinkle coarse salt evenly over the surface of the green chaffed ensilage at intervals of every 3ft. There are four different kinds of silos—stack, clamp, pit, and overhead. Consideration must be given to local conditions in order to decide which method of construction is to be adopted. I feel confident that the silo most suitable for this district is the pit silo, because there is not so much heavy handling as in overground silos. The pit silo, if possible, should be constructed in the side of a hill. I favor a pit of about 13ft. square, or, if round, about that diameter and 15ft. deep, which will hold enough ensilage to feed 20 cows for about four months, that is, allowing each cow one cubic foot per day, or in weight, 40lbs. or 45lbs. Build the silo of brick and cement it over. If square, round off the corners to enable the fodder to be well tramped, which is a most important factor in making good ensilage. Have a door frame built in the lower side where slabs can be fitted one above the other till the frame is completely filled in. When this is done paste sheets of unbleached calico on the slabs to prevent air getting between them. A sliding roof is also a good idea, because it can readily be moved during filling and pushed back afterwards. The best plan in filling overground silos is to chaff the material and have an elevator to raise it from the cutter to the top of the silo. Great care must be taken in filling. As it falls from the elevator, the heavier portions of the green chaff will accumulate in the centre, gradually forming a cone, the result is uneven shrinkage and subsequent waste owing to the air not being properly excluded. From 8ft. to 12ft per day should be put into the silo. When full, leave it for a day to settle, then fill up again. As with a pit, select the greenest of the crop for the top layers. After the top has been made even, cover it with tarred paper or bags and add weights or material, such as earth, stones, sand, or bricks, piled on planks or boards. To make sweet silage, the silo should be filled slowly to ensure a temperature of well over 100 deg., which neutralizes the acid fermentation. A simple way to test the temperature is to push a piece of iron into the mass and leave it there for a while; the iron must not be too hot to hold when drawn out, nor only just warm. To cool the silage tramp it well, and to make it warmer leave off carting for a day or two. Manufacturing stack silage costs very little, there being no chaffing or special construction. One great drawback is the enormous waste which occurs on the outside of the stacks owing to the air penetrating to a considerable depth. These stacks are made in the same way as ordinary haystacks. It is important to have great and regular pressure. Several methods of pressure as by chain, hydraulic presses, and lever appliances have been patented. A little attention is necessary for a day or two to see that it goes down without cracking.

Materials for making the silage stack should be used whole as a rule and carted immediately after cutting. Dry earth may be spread directly on the ensilage or on intervening sheets of corrugated iron, felt, &c. In this case no other covering will be necessary. Clamps are simple and inexpensive receptacles for the green crops which I have enumerated above. They are advocated by practical men as most valuable in times of emergency, and some stockowners prefer to adopt them." The paper then described this method of making silage. "Opinions differ as to how quickly a silo should be filled. Ensilage can be fed at any time after six weeks from being filled, but it takes about three months or four months before complete fermentation has taken place. When feeding cows, it is well to remember that ensilage taints milk, not through the cow, but through the air, so it is as well to feed it at a distance from the cowshed or handle it carefully in the sheds. Roughly, the cost of cutting, carting, and filling is only about 3s. or 4s. per ton. The weight required for pits 14ft. deep should not be less than 3cwt., or 4cwt., per cubic yard, and for overground 25ft. high, only about 2cwt., per cubic yard is required. The pit silo which I have recommended for this district will cost about £65. If wood and iron are used the cost is much less than brick, stone, or concrete, but no doubt concrete is the cheapest in the long run. Iron must be tarred to guard against the acids of the ensilage, or even whitewashing will suffice."

TWEEDVALE.

April 14th.—Present: 25 members and visitors.

TOMATO CULTURE.—Mr. E. W. Dearman read the following paper: "The most important point in the cultivation of tomatoes is the selection of the soil. It should not be too rich, because such soil tends to make too much stalk growth, to the detriment of the fruit. Tomatoes will also be more liable to disease in rich soil than in sandy soil. The plants should be sheltered from frost and

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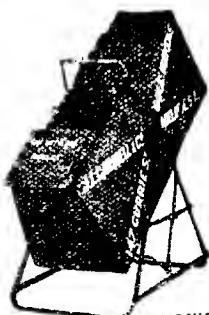
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cold winds, and, if possible, they should always be planted on the north side of a hill, in order to get as much sun as possible. In preparing the seed bed, it should be well drained. To do this the best plan is to bank it up several feet with stable manure. The seed should be sown very shallow, about the end of August, and it is advisable to sprinkle a little water over the seed occasionally. Some growers prefer putting glass over the seed to make them grow more quickly, but plants grown under glass are more delicate than those raised in the open. It is a good plan to transplant the seedlings again in another bed several inches apart, to encourage them to make stronger growth. This will also make the roots grow several inches up the stem, with the result that they will make better progress when planted in the field. Planting out should be done not later than November. In planting on a large scale, I prefer to place the plants about 4 ft. apart each way, which leaves enough room to work the soil with a horse and scuffle. If the weather should be very warm when planting out, it is best to provide a shelter of bracken fern. The plants should receive very little water until the first fruit sets, and from then onwards irrigations can be applied. A strip of about 10ft, or 12ft. should be left every chain in order to provide sufficient room to get through with a horse and vehicle. Staking is no doubt a good plan, but generally growers have not got the time to do it. To grow tomatoes successfully, pruning is the most essential part, otherwise the plants make too much growth, with the result that the fruit will not set. Pruning should be carried out at least three times during the season. As to varieties, 'Early Dwarf Red' is the earliest, but it is not well shaped, and is also too hollow and too soft for packing, it would not be advisable to plant this sort on a large scale. 'Ponderosa' has a very smooth skin, it is rather a shy bearer, liable to crack, and has very thin skin. 'Burwood's Prize' is, no doubt, the best tomato; it is beautifully shaped, grows to a large size, the skin very rarely cracks, and it is a good carrying tomato.'

ALDINGA, April 16th.—Mr. H. L. Stanfield read a paper "Tractor v. Horses," and a good discussion followed.

BLACKHEATH, March 21st.—Present: seven members and two visitors.—Mr. E. T. Pym read an extract from the *Journal of Agriculture* entitled "The Care of the Flock," which was followed by a lengthy discussion.

BLACKWOOD, March 17th.—"Cider and Vinegar Making" formed the subject of an address given by Mr. D. G. Quinn (Viticultural Instructor at Roseworthy Agricultural College) to a well attended meeting of members and visitors.

CHEERY GARDENS, April 15th.—During the afternoon 10 members of the Branch and 20 visitors made an inspection of the orchard and vegetable garden on the property of Mr. C. Ricks. Afternoon tea was provided by Mrs. Ricks. In the evening the usual business meeting was held.

CHEERY GARDENS, May 13th.—Fourteen members attended the May meeting which took the form of a "Debate" evening. Several subjects of local interest were brought forward and debated by Messrs. C. Ricks, M. Basey, H. and L. Strange, J. Lewis, and H. Jacobs.

CURENCY CREEK, March 21st.—Mr. P. H. Plummer read an interesting paper, "Take-all," and an instructive discussion followed.

PORT ELLIOT, March 19th.—A lengthy discussion took place on the proposal to form a local branch of the Dairymen's Association. Other matters brought forward for consideration were "Shelter for Stock" and "Rabbit Destruction."

PORT ELLIOT, April 16th.—The Hon. Secretary (Mr. H. B. Welch) read extracts from the *Journal of Agriculture*, "Planting Pines on Stock Reserves." Members then discussed the subjects, "Planting Pines" and "Poisoning Rabbits."

STRATHALBYN.—*Noxious Weeds*.—That legislation at present in force in respect to the destruction of noxious weeds was failing in its object was urged by Mr. S. Bottrill, who, in the course of a paper, referred to the large number of undesirable plants that had been introduced into the State during recent years. He gave local instances of the introduction and spread of weeds, and suggested that

had they been dealt with when they first made their appearance, they could have been eradicated. Dealing with the suggestion that horehound should be proclaimed a noxious weed, Mr. Bottrell said:—“It would be a great injustice to landowners who have none growing on their land (because their cattle will not eat it), and where it is so valuable in keeping stock in good health, to be compelled to clear the roads adjoining their holdings. I noticed last year that in the north landowners were heavily fined for neglecting to destroy the stemless white horse thistle, but if it had grown in that district when I was there in drought time, it would have been a God-send to starving stock, because there are but few better milk and cream producing plants. On account of its prickly nature, however, it requires cutting so that stock can start at the butt end. When it is dry sheep will fatten on the seeds, while the leaves act as a fertiliser for the land. Bathurst burr is one of the worst weeds; it is useless as fodder and the burrs reduce the value of wool every year to a considerable extent, and travelling sheep spread it in all directions. There are a large number of objectionable weeds and plants, and their destruction is a hard problem to solve. Owners and occupiers of land should do their best to keep the land clean instead of waiting for the law to compel them to do so.”

SOUTH-EAST DISTRICT.

ALLANDALE EAST.

April 11th.

SHEEP MANAGEMENT.—Mr. T. H. Earl, who read a paper dealing with this subject, said he wished to confine his remarks on sheep raising to conditions that obtained in the Allandale district. In his opinion they had neither the quantity nor the quality of feed to raise lambs for freezing, therefore his energies had been confined to raising sheep for wool. The ideal sheep he considered to be the Comeback. For the farmer starting a flock he recommended buying four or six tooth crossbred ewes of even size and placing them with a good Merino ram as free from wrinkles as possible. The lambs from that cross were hardy, grew to a fair size, and carried a good fleece of wool which realised a good price in the market. Another good type of sheep for their district was the first cross—from Merino ewes joined with a Lincoln ram. Those sheep were cleaner pointed than the Comeback, the wool was of better length, and they grew a very good carcass when allowed to mature. The time to join rams with the ewes was a very debatable question. Last year was an exceptionally bad year for lambs, feed was short, foxes were plentiful, and weather conditions unsuitable. His flock began to lamb in June, and the lambs that did live through the bad season were small and stunted and made slow growth. Those that came later, when the feed began to grow, did much better, and with them very few losses were experienced. This year he had arranged so that lambing would not commence until about the middle of August. It might be argued that late lambs would not eat so much wool, but the fact that a better percentage would be obtained would make up for that deficiency. At shearing time there was usually plenty of feed and the sheep required little attention until the commencement of the dry weather. If possible, water should be provided in all the paddocks, but if the sheep had to be watered, a drink every two days should be sufficient. A piece of rock salt placed in a box or trough near the watering place would keep the animals in good health, and a change to the stubble paddock should put them in good, fat condition by dipping time. On account of the bad season last year tick was more prevalent than usual, but he believed that if sheep were thoroughly dipped in a suitable preparation, mixed according to directions, and kept in good condition, there would be very few losses from ticks. All sheep, especially ewes in lamb, should be crutched as soon as the first young grass began to appear. The wool saved would pay for the trouble, and the sheep would not need so much trimming through the winter. It was a good plan to have an old pair of shears at the sheep-yard, so that when the sheep were yarded the dogs could be trimmed off before

too much wool was spoiled. Ewes in lamb should be separated from dry sheep if possible. Dry sheep travelled about more than ewes in lamb, and if the latter were younger than four tooth, they were liable to leave their lambs in order to keep up with the rest of the flock. If the ewe left her lamb she could be placed in a small paddock with a couple of others, when she would in all probability mother it. Ewes in good, strong condition did not have any difficulty in lambing as a rule, but if the occasion should arise the head and forelegs should be drawn gently down until the shoulders appeared, and the ewe allowed to go; next nine strains the lamb would come easily. Opinions differed as to the age at which lambs should be marked, but he thought a fortnight was quite old enough. Should the lambs be late and a few flies about, a 6lb. jam tin full of water should be obtained and a tablespoonful of phenyle mixed with the water. That dabbed on with a brush made by tying a piece of wool on a stick would help to heal the cuts and keep the flies from striking. Should a sheep or lamb get in a trap and its leg be broken, but the bone did not protrude through the skin, its life could be saved by splinting the leg with a piece of bark or hard leather. If the foot had been trapped a swelling would appear in two or three days. The swelling should be opened and washed in an antiseptic solution, otherwise it would lead to blood poisoning. That might seem rather much trouble, but at the present time a live sheep was a valuable asset to the farmer.

MOUNT GAMBIER (Average annual rainfall, 32in.).
April 12th.

CARE OF THE ORCHARD.—MR. J. H. OREHARD (Instructor and Inspector for the South-East) read the following paper:—“At the present time there is work that can be done that will materially assist in suppressing diseases and pests. Firstly, there are the windfalls and diseased fruits which should not be left under the trees to rot; such a practice, apart from the unsightly appearance, can only be conducive to the spread of pests. The fruit should be gathered as soon as possible, and, if intended for the pigs, thrown into the water at once and allowed to soak for 24 hours before being fed. The custom of feeding diseased fruit directly to stock is very little better than allowing it to remain under the trees, for in either case the pest has time to leave the fruit and seek shelter. Failing soaking, the fruit should be burnt or buried. At the same time a good, thorough spraying applied when required, will obviate the necessity for much of this work. Also, there is nothing to be gained by storing windfalls or disease infested fruit; it will not keep any length of time, and whilst in storage the pest is permitted to find a safe shelter about the building wherein to winter, only to emerge again in the spring and proceed with its destructive work. The leaves from beneath the trees should be raked together and burnt. In this way many spores or germinating cells of fungoid diseases, such as peach leaf curl, shot-hole, and scab of the apricot, will be destroyed. This practice of burning, worked in conjunction with a fungicide spray, such as Bordeaux mixture, will effectively deal with fungoid diseases. Following the harvesting of the crop it is as well to stir up the surface around the trees thoroughly for the tramping occasioned in gathering will on doubt have consolidated the ground. There are many trees in and around the district which have long since passed their usefulness, and are now neither of value nor ornament. Retaining an old, decayed, and totally neglected fruit tree for shade has nothing to commend it, especially as there are so many trees more eminently suited to the purpose. Old trees with broken or decayed limbs are a harbor for pests, and a good spraying can easily be counteracted in this way, and, then, likely as not, the spray mixture is blamed when there is no appreciable diminution in the pest. The only value trees of this kind have is from the point of view of how much firewood they will yield. During the past season many fruit trees have died throughout the district as the result of the excessive moisture in the subsoil, following an exceptionally wet season. The trees probably reached the stage where the root had set and developed to a certain extent before they died. Had the tree been dug up, the roots would no doubt have revealed the trouble at once, wet and rotten, and if broken, emitting a distinct sour odour. This, of course, is a climatic condition which cannot be controlled.

but much can be done to minimise its effects by good drainage and keeping the soil in good heart. Trees that have died right out should be removed wholly and the preparatory work of replacing carried out. The ground requires deep and thorough working and an application of farmyard manure, and to be followed later by a dressing of lime would be an advantage. Replace a stone fruit tree with a pome fruit tree and vice versa. Trees only partly affected by the wet conditions also need attention. If a limb has died right down, remove it as close as possible to the junction of the stem and coat the exposed surfaces with thick paint. Where the limb is only partly affected the dead portion should be removed, care being taken to see that the limb is cut back to a good healthy shoot or bud growing out in the right direction. Young trees could be planted now. The advantage of autumn planting lies in the fact that the roots of the tree become established before the ground becomes too cold, and then, with the approach of spring and warmer conditions, they are ready to go right ahead. Only yearling trees, that is, trees one year old from the bud, should be purchased. The check incidental to transplanting is then only slight and they soon recover, whereas older trees with a larger root system receive a more severe check and consequently take longer to become established. The latter, too, are often the culps of previous years and sometimes difficult to train into well shaped trees. Purchase from a reliable source, for although the low-priced article is the cheapest at the outset it is more than likely to become the most expensive in the long run; therefore start off with good, healthy trees which can be reasonably relied upon to be true to name, and for which a reasonable price has been paid. The selection should be such that there is a succession of fresh ripe fruit and not all of one variety ripening at the same time; and always have two trees of the one species, but not necessarily of the same variety. The following varieties are recommended, the order of ripening being adhered to as much as possible:—Apples—Of the early ripening kinds, Gravenstein and Ribstone Pippin for dessert, and Twenty One or Maiden's Blush, a cooker which grows to a large size. Early ripening apples do not keep well, so it is advisable not to plant to any extent. Jonathon is one of the best for the district; King David and Delicious are both well recommended. Cleopatra is one of the best all-round apples cultivated, but it is susceptible to disease in a district such as this. Dunn's, a very fine cooker or dessert apple, is likely to crack badly at the stalk under wet conditions. London Pippin or Five Crown does very well and is recommended in preference to the above two. Hoover (dessert) and Reinette du Canada (a large cooker or dessert) both do well in the locality. Rome Beauty is an excellent apple, but as produced here, generally lacks color and flavor. Rokewood is a very late dessert or kitchen apple and is a great keeper if handled carefully. There are others, such as Strawberry Pippin, ripening before Rome Beauty, and Nickajack, a little later, well worth planting if space permit. Pears.—Williams or 'Duchess' is the best, and then there are Gassel's Bergamot, Beurre Bosc, and Glou Morceau, all good dessert kinds, and with the exception of the first named, good keepers. Vicar of Wingfield and Winter Nellis are late keepers, and the very large cooking variety, Uvedale St. Germain, which will keep five or six months without any particular care. Apricots—Oullu's Early and Moorpark, the latter a mid-season variety suitable for all purposes. Peaches—Brigg's Red May, Triumph, Hales' Early, Early Crawford, Moir, Elberta, and Lady Palmerston. Nectarines—Gold Mine, New Boy, and Lee's Seedling. Plums—Early Orleans, Angelina Burdett, Diamond, Satsuma, Wickson, and Cox's Golden Drop. Quinces—Smyrna and Rae's Mammoth. The Fruit Fly—with the discovery of the dreaded fruit fly in various parts of Victoria it behoves all travellers, in the interests of the fruitgrowers of this State, to refrain from bringing fruit over the border in bags or suit cases. Too much publicity cannot be given to the discovery of the fly, for only in this way can its dangers be impressed upon the public generally; the fruitgrower is well aware of them. Legislation has been passed in Victoria which may seem drastic to some, but unless infested areas are isolated there is little chance of combating the pest. In that State fruit from a proclaimed fruit fly area can only be sent direct to a factory to be made into jam, after having first passed inspection at the factory doors. The fly's methods of working is, briefly—The female fly carries an ovipositor by means of which it pierces the skin of the fruit and deposits eggs, seven or over in number. This puncture may not at first be discernible to the naked eye, which means that what

to all appearances is clean fruit might easily be infested with eggs of the fly. The larvae, or maggot, hatches out in a couple of days and feeds on the fruit for about a fortnight. The diseased fruit generally falls and the maggot comes out, burrows into the ground, turns into the chrysalis stage, and in about 14 days or so emerges as the perfect fly, again to carry on the destructive work. From the above brief description it can be realised what a difficult problem the fruit fly presents.

Pruning and Spraying—Many landowners are neutralising the benefits derived from the closer observance of pruning rules by neglecting to spray the apple and pear trees with arsenate of lead to check and prevent codlin moth. Contrary to the generally accepted idea, codlin moth is easily kept in check if systematic and thorough spraying is carried out, even though the neighbor may be neglectful. At times objection is raised to the use of a poison, but to kill the grub a poison must be used, or how else is it to be done? South Australian regulations require the use of arsenate of lead for the purpose, and methods that might be adopted elsewhere do not apply here. It is estimated that at the Government orchard at Blackwood over 95 per cent. of the fruit is free of codlin this year. When it is remembered that this orchard has many hundreds of varieties flowering at different times, it can be realised how effective a good spraying is when applied at the right time. The first spraying should be given just as the petals are falling from the flowers when the lobes are closing, and subsequent sprayings should follow at intervals of 14 to 28 days. All rubbish must be kept away from the trees, and, as mentioned previously, get rid of all infested fruit. A source of frequent inquiry during the past season has been aphid on cherry trees. In most cases it attacked the young growing tips of the shoots, giving them a burnt or scorched appearance. The remedy for this and other aphides is to spray with kerosine emulsion or red oil and repeat the dose a couple of times with intervals of a few days. This is necessary, for only those directly touched by the mixture are killed. In one instance in one garden they were effectively dealt with by cutting off the affected part of the shoots and burning them. Another particularly troublesome pest locally is the so-called Soldier beetle. There seems little prospect of eradicating it, but much can be done to minimise the trouble by destroying all rubbish, weeds, &c., from the garden and not allowing them to accumulate. Hollow logs and hollow limbs should not be left about and the fruit tree with the hollow stem should be destroyed. Plenty of lime freely sprinkled about is very good. The season has been all in favor of fungoid diseases, and curl leaf of the peach has been well in evidence. Trees that were badly affected require within the next few months a good spraying with Bordeaux mixture or lime sulphur; the trees are then quite dormant and this early spraying is very necessary. Another application is needed in the early spring when color begins to show in the buds. The same treatment can be given the apricot to prevent shothole and seab."

In answer to questions, Mr. Orchard said that when dealing with aphid on cherry trees, when in small numbers, he had met with splendid success with the use of kerosine brushed on the affected parts of the tree with an old tooth brush. Mr. A. J. Hemmings said in eradicating aphid from some fruit trees he had trenched the ground around the trees and placed soap suds and kerosine in the trench. He had found this effective. Mr. Orchard did not favor this course being adopted. He preferred that an application be made right to the pest.

KALANGADOO, April 8th.—Mr. McCorquindale read a paper, "Star Thistles," and in the discussion that followed it was agreed that the thistles should be destroyed so soon as they appeared on the farm. On Easter Monday a successful picnic, concert, and dance were held under the auspices of the Local Branch of the Bureau.

TANTANOOOLA, April 5th.—The President (Mr. W. C. B. Haines) read an article, "Liming the Soil," and an instructive discussion followed. The Hon. Secretary (Mr. R. Campbell) tabled samples of vinegar made from waste apples.

TANTANOOOLA, May 3rd.—The Hon. Secretary (Mr. R. Campbell) read a paper, "The Handy Man on the Farm," and gave a report of the proceedings of the South-Eastern Conference.

